Texas State Journal of Medicine

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DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION AND PUBLIC HEALTH IN TEXAS

The Official Family for 1947-1948 is published herewith, as a matter of record and for the information of any who may be concerned. The State Medical Association is a corporation and its affairs are managed under the Articles of Incorporation and in accordance with its Constitution and By-Laws. The business of the Association is transacted by various officers and groups, each under carefully prepared instructions incorporated in the Constitution and By-Laws, and set out by authorized resolutions. It is well that our members understand the procedure, and that they act accordingly when they have any sort of business to transact with the Association and in its name. If there is any doubt about any of it, it is the business of the State Secretary to see that the doubt is settled. A letter to the Central Office will get results.

The office of President is highly important, even though there is an official or group of some sort set up to attend to every activity of the Association. He is the leader, and, together with the Secretary, the coordinator of these activities. He is ex officio a member and chairman of the Executive Council, and a member of the Committee on Legislation and the Council on Scientific Work.

The President-Elect and the Vice-Presidents are, in effect, the understudies of the President. If the President should be removed from office, the Board of Councilors would elect one of the three Vice-Presidents as President, the President-Elect taking the place of the President automatically at the election of a new President-Elect at the annual session of the House of Delegates. This arrangement apparently has been very effective and entirely satisfactory, although it failed to operate satisfactorily under the travel restrictions of the recent World War, under which there could be no meeting of our House of Delegates for the purpose of electing and installing officers.

The State Secretary is the administrator or executive officer for the Association. His duties are numerous and important. He is responsible for the records of the Association, and, under the President or the Board of Trustees or other constituted agency of the Association, must see to it that all agents of the Association are at least advised as to their duties and responsibilities. He is the only official of the Association who is authorized to receive money for the Association, and receipt for it. He is also the only official who can disburse the money of the Association. The Treasurer is custodian of the money and property of the Association. All money and properties received by the Secretary are turned over to the Treasurer. The Secretary receives from the Treasurer the money he spends for the Association, upon voucher issued by the Board of Trustees, and the Board of Trustees has complete and exclusive control over all money and all property belonging to the Association, subject only to the provisions of the Constitution and By-Laws of the Association. The House of Delegates can change these By-Laws so as to require any particular expenditures, but it takes a year in which to do that. The policies of the Board

of Trustees can be influenced by the House of Delegates by filling vacancies created by the retirement of a Trustee each year. It will take two or three years in this manner to change the policies of the Board. On the whole, it would seem that the financial affairs of the Association are effectively guarded. The will of the House of Delegates, which represents the will of the Association, should govern every activity of the Association, but there is sometimes a distinction between impulse and will, a distinction which fully justifies the plans for control heretofore set up by the House of Delegates. The policy of the House of Delegates with respect to any matter may be controlled by county medical societies through the election of delegates. The ex officio members of the House of Delegates are, in turn, elected by these delegates.

The Councilor is an officer of the Association. He is the organizer and censor for his district. Together, the Councilors constitute a Board, which is the Supreme Court of the State Medical Association, and which is final and conclusive authority, so far as we are concerned, in all matters of medical ethics and in the management of county societies. The Councilors are by way of being advisors in most of the activities of the Association, and it is so stated in a good many sections of the By-Laws. A proper use of the Board of Councilors might lessen the need of a number of special purpose committees. There is such a thing as overloading any group serving the Association routinely, and there is occasionally need of expert services in some particular that may not be found in the personnel of any board, council, or standing committee, but there is also such a thing as so dispersing responsibility as to interfere with the work of any of these groups.

In effect, all activities of our Association having to do with medical problems on a national basis are in the hands of our Delegates to the American Medical Association, which Delegates, while operating under the laws of the national body, are, in effect, officers of the State Medical Association. They represent the State Association in dealing with a wide variety of policies and problems, many of which come back to us for decision. Our Delegates to the national body can be instructed by our House of Delegates, through the adoption of resolutions or by motion. The loose screw in the arrangement is that our Delegates to the American Medical Association, being officials of the national organization and only by inference officials of the State Association, are not required to make official report to our House of Delegates. As it happens, it has for years been a custom of our Delegates to the American Medical Association to make an unofficial report of the activities of the national body, through the editorial pages of the TEXAS STATE JOURNAL OF MEDICINE.

All legislation, state and national, with which the State Medical Association is concerned is in the hands of our Committee on Legislation, which is really a "Council," as we have come to look upon such groups. It is organized on a five-year, overlapping term of office basis, with the President and the Secretary as ex officio members. The committee very naturally operates under mandates from the House of Delegates and has the authority to act independently of such mandates only in the face of emergency, and in the heat of battle. Every agency of the Association which has to do in any particular with legislative problems is subject to the control of the Committee on Legislation, and frequently a number of them are called into conference, most notably at the present time, our Committee on Public Relations and the Board of Councilors. The call of this committee is imperative, and more frequently than otherwise is in the nature of an emergency.

The Executive Council is an ex officio body entirely. It exists primarily for the purpose of advising and counseling with the President and the Secretary of the Association. It comprises the officers of the Association, as such, the Board of Trustees, the Board of Councilors, and the Committee on Legislation. Thus, it will be seen that the President, through this Council, will have at hand those of the Association qualified to speak authoritatively upon any subject. Indeed, the groups which go to make up the Executive Council have quite frequently asked the President to call the Council together for the purpose of discussing their respective and collective problems. The matter of legislation, both state and national, is customarily looked upon as a problem for the Executive Council, under the lead, of course, of the Committee on Legislation. The Executive Council comprises the ex officio membership of the House of Delegates, with the exception of the Council on Medical Defense, the members of which are, by virtue of their office, also delegates. Thus a very convenient tie-in with the House of Delegates is always ready at hand. This Council cannot legislate and it cannot determine policies, but it can interpret and advise.

The Committee on Public Relations is, as a matter of fact, a committee of the Association, but it is, according to the By-Laws,

appointed by the Board of Trustees, and it works under the direction of the Board of Trustees, and in accordance with the mandates of the House of Delegates. This committee has come to be quite important in connection with a number of activities of the Association, notably legislative, and in the promotion of prepayment plans of medical service and rural medical service, which two are largely coincident. There is also much to be done by this committee in connection with the scientific work of the Association. Indeed, while this committee has no authority to make decision in connection with any of the problems of the Association, it must understand all such problems, in order that it may explain them to the public, and, as for that, to the medical profession. Thus the committee has served in close cooperation with the Committee on Legislation, in particular. Public relations work is relatively expensive. It is for that reason, very largely, that the committee is under the direct control of the Board of Trustees.

A new committee will soon be appointed by the President, the functions of which will closely relate to the work of the Council on Medical Economics and that of the Committee on Public Relations, namely, the Committee on Rural Health. The American Medical Association has for several years been intensely interested in improving medical service in rural areas. A number of disturbing problems have arisen because of and in connection with lack of adequate medical service in sparsely settled areas. It is believed that if plans can be set up and successfully operated for adequate medical service for these areas, along accepted, orthodox lines, the encroachments of socialized medicine may be retarded, if not entirely stopped. There would seem to be no reason why a prepayment plan could not be successfully conducted on a fee-for-service basis. Indeed, a plan of the sort has for several years been successfully operated in the city of Dallas, the employees of a large manufacturing plant receiving medical service from the physicians of their choice, on a fee basis. It is easily possible to organize people of rural districts into such groups for the purpose of procuring medical and hospital service on a prepayment basis, in a similar manner. The prepayment plans in operation at the present time throughout the country are all operated under a fee system of payment for medical service. The Council on Medical Economics, the Board of Councilors, the Committee on Public Relations, and the Committee on Rural Health should be able collectively and individually to solve a good many of our problems relating to medical and hospital service for the people. We are still a pioneer people, and our spaces are still very wide-open.

The Veterans Administration home town medical service plan has been in progress of negotiation between our Council on Medical Economics and the Veterans Administration for about a year. It will be remembered that the Council on Medical Economics rendered a very comprehensive and complete report on the matter to the House of Delegates at Dallas, last May, submitting the proposed agreement and a fee schedule which had been agreed to with the exception of a few items. It will be recalled, further, that the House of Delegates decided that the problem was entirely too large to negotiate in the short time at hand and under the circumstances. The Council was instructed to continue the negotiations, and if and when an agreement was reached, to refer the matter back to the House of Delegates. There will be a conference of national proportions on the subject, at Chicago, November 5. The Council will be glad to hear from any of our members who may have ideas on the subject. A by-product of these negotiations, which may be of considerable importance in connection with prepaid medical service, is the matter of the schedule of fees devised for the Veterans Administration plan, which schedule is as complete and as fair and square as any schedule of fees could be made to be in our section of the country.

The scientific work of the Association is in the hands of the Council on Scientific Work and several special-purpose committees. The Council on Scientific Work sets up the program for the annual session, and with the advice and consent of the President, the Secretary, and the Chairman of the Council, has complete charge of the meeting each year. The Section Officers are ex officio members of this Council, as are the President and Secretary of the Association. The Council is constantly begging for suggestions and new ideas. The Committee on Scientific Exhibits is virtually a part of the Council on Scientific Work.

Our Committee on Tuberculosis has recently been set up on a permanent, overlapping term of office basis. It has been very active during the past year and expects to be still more active during the present year. County societies have been requested to set up committees on tuberculosis, and there will doubtless be questionnaires to be answered. Here is a splendid opportunity for any of our members to come forward with sugges-

tions that should be given consideration. More about this committee later.

The Committee on Cancer continues to cooperate with other groups interested in the subject, and the activities of all of them have been based on professional ideals. During the past year it would appear that the cancer movement has been more orthodox as relates to medicine, and more successful in every particular. We need no longer have any fear of cooperating with cancer groups connected with the American Cancer Society.

The Committees on Mental Health, Maternal and Child Health, Venereal Diseases, and Industrial Health are all by way of being advisory or liaison committees, mainly in connection with the State Board of Health. One of the important committees, as little as we think of it, is the Advisory Board to the Texas Society of Medical Technologists. Our medical technologists have felt the need of being securely anchored to orthodox medicine and asked for this committee several years ago. It has been quite a satisfactory arrangement.

Our Committee on Medical Education and Hospitals may have a busy time this year, in view of the hospital building program about to get under way under the auspices of the State Board of Health and a special committee appointed by the Governor to cooperate with the federal government under the Hill-Burton Act (Public Law 725).

A very important committee this year is the Committee on Revision of the Constitution and By-Laws. This committee was directed more than a year ago to undertake to streamline our Constitution and By-Laws, which the House of Delegates has the constitutional right to order at the end of a year's time. For reasons impossible to prevent, the committee was not able to bring about the directed revision last year. It has been told to do something about it this year, and a glance at the personnel of the committee will leave little doubt that something will be done about it.

The list of Officers of Scientific Sections is again published. Our readers are reminded that the scientific program for the next annual session will be closed January 15, 1948, and that it cannot be closed before that time. It is fair enough to advise here, however, that Section Officers report practically complete programs all along the line. If any of our readers would present a paper before any of the sections, they should lose no time in advising one of the officers of the scientific sections, or, if they prefer, the State Secretary, who will make the proper distribution of the offer.

The Official Family for 1947-1948 is listed as follows:

OFFICERS

B. E. Pickett, Sr., President, Carrizo Springs.
Tate Miller, President-Elect, Dallas.
X. R. Hyde, Vice-President, Fort Worth.
Frank A. Selecman, Vice-President, Dallas.
E. W. Jones, Vice-President, Wellington.
Holman Taylor, Secretary, Fort Worth (three years).
T. H. Thomason, Treasurer, Fort Worth (three years).

BOARD OF TRUSTEES

T. C. Terrell, Chairman, Fort Worth (four years).
Merton M. Minter,[1] Vice-Chairman, San Antonio (one year).
E. A. Rowley,[2] Secretary, Amarillo (two years).
F. J. L. Blasingame, Wharton (five years).
J. B. McKnight, Sanatorium (three years).

BOARD OF COUNCILORS

First District, Ralph H. Homan, El Paso (two years). Leigh E. Wilcox, El Paso, Vice-Councilor.
Second District, A. H. Fortner, Sweetwater (one year). C. A. Rosebrough, Sweetwater, Vice-Councilor.
Third District, Harvey H. Latson, Amarillo (three years). G. T. Vinyard, Amarillo, Vice-Councilor.
Fourth District, O. N. Mayo, Brownwood (two years). R. E. Windham, San Angelo, Vice-Councilor.
Fifth District, Cary Poindexter, Crystal City (three years). J. L. Cochran, San Antonio, Vice-Councilor.
Sixth District, W. E. Whigham, McAllen (three years). J. F. Pilcher, Corpus Christi, Vice-Councilor.
Seventh District, R. T. Wilson, Secretary, Austin (one year). J. R. de Steiguer, San Marcos, Vice-Councilor.
Eighth District, Harvey Renger,[3] Hallettsville (one year). James H. Wooten, Jr., Columbus, Vice-Councilor.
Ninth District, Hatch W. Cummings, Jr.,[4] Houston (one year). J. T. Billups, Houston, Vice-Councilor.
Tenth District, A. E. Sweatland, Lufkin (one year). M. O. Gibson, Lufkin, Vice-Councilor.
Eleventh District, J. M. Travis, Jacksonville (two years). C. E. Willingham, Tyler, Vice-Councilor.
Twelfth District, G. V. Brindley, Chairman, Temple (three years). J. W. David, Corsicana, Vice-Councilor.
Thirteenth District, R. G. Baker, Fort Worth (two years). H. H. Cartwright, Breckenridge, Vice-Councilor.
Fourteenth District, C. C. Nash, Dallas (two years). W. A. Lee, Denison, Vice-Councilor.
Fifteenth District, Joe D. Nichols, Atlanta (three years). Hugh M. Ragland, Gilmer, Vice-Councilor.

DELEGATES TO A. M. A.

H. R. Dudgeon, Waco (two years).
B. E. Pickett, Sr., Carrizo Springs (two years).
E. H. Cary, Dallas (two years).
Holman Taylor, Fort Worth (one year).
F. J. L. Blasingame, Wharton (one year).

ALTERNATES

E. W. Bertner, Houston (two years).
H. Leslie Moore, Dallas (two years).
A. C. Scott, Temple (two years).

1. Appointed August 1, 1946, to fill the vacancy created by the resignation August 1, 1946, of Dr. S. E. Thompson, Kerrville.
2. Appointed October 15, 1946, to fill the vacancy created by the resignation of Dr. W. B. Russ, San Antonio.
3. Elected to succeed Dr. F. J. L. Blasingame, Wharton, who resigned upon his election as Trustee.
4. Appointed April 18, 1947, to fill the vacancy created by the resignation of Dr. Ghent Graves, Houston, who had been appointed May 17, 1946, to fill the vacancy created by the resignation of Dr. J. E. Clarke, Houston.

L. H. Reeves, Fort Worth (one year).
Allen T. Stewart[1] Lubbock (one year).

COUNCIL ON MEDICAL DEFENSE

W. D. Jones, Chairman, Dallas (one year).
Holman Taylor, Secretary (ex-officio), Fort Worth.
Thomas M. Jarmon, Tyler (four years).
L. B. Jackson, San Antonio (three years).
T. R. Hannon,[2] Houston (two years).

EXECUTIVE COUNCIL

Ex-officio, the President (Chairman), and the Secretary (Secretary) of the Association, President-Elect, Vice-Presidents, Board of Trustees, Board of Councilors, and the Legislative Committee.

COUNCIL ON SCIENTIFIC WORK

Ex-officio, the President and Secretary of the Association and Officers of the Scientific Sections.
A. C. Scott, Chairman, Temple (one year).
May Owen, Fort Worth (five years).
Alfred H. Hill,[3] San Antonio (four years).
R. B. Alexander, Waco (three years).
George W. Waldron,[4] Houston (two years).

COUNCIL ON MEDICAL ECONOMICS

H. E. Griffin, Chairman, Graham (two years).
Everett C. Fox, Dallas (five years).
Tom B. Bond, Fort Worth (four years).
H. R. Dudgeon, Waco (three years).
W. R. McWilliams, Del Rio (one year).

COUNCIL ON POSTGRADUATE MEDICAL EDUCATION

David W. Carter, Jr., Chairman, Dallas (four years).
H. E. Whigham, McAllen (five years).
Dick P. Wall, Galveston (three years).
Vacancy[5] (two years).
Lee Rice, San Antonio (one year).

COMMITTEE ON LEGISLATION

J. B. Copeland, Chairman, San Antonio (five years).
B. E. Pickett, Sr. (ex-officio), Carrizo Springs.
Holman Taylor, Secretary (ex-officio), Fort Worth.
L. H. Reeves, Fort Worth (four years).
John K. Glen,[6] Houston (three years).
Z. T. Scott,[7] Austin (two years).
Elliott Mendenhall,[8] Dallas (one year).

COMMITTEE ON COLLECTION AND PRESERVATION OF RECORDS

S. E. Thompson, Chairman, Kerrville (five years).
E. W. Bertner, Houston (four years).
A. A. Ross[9] Lockhart (three years).
Marvin L. Graves, Houston (two years).
John T. Moore, Houston (one year).

COMMITTEE ON HEALTH PROBLEMS IN EDUCATION

O. M. Marchman, Chairman, Dallas (one year).
Allen C. Hutcheson, Houston (five years).
Sam N. Key, Austin (four years).
W. S. Barcus, Fort Worth (three years).
C. P. Yeager, Corpus Christi (two years).

1. Elected to fill the vacancy created by the death of Dr. R. B. Anderson, Fort Worth, January 2, 1947.
2. Appointed March 24, 1947, to fill the vacancy created by the resignation of Dr. A. P. Howard, Houston.
3. Elected to succeed Dr. J. B. Copeland, San Antonio, who resigned upon his election to the Committee on Legislation.
4. Appointed April 18, 1947, to fill the vacancy created by the resignation of Dr. J. S. McCelvey, Temple, April 4, 1947.
5. Created by the death of Dr. A. O. Singleton, Galveston, June 12, 1947.
6. Appointed August 6, 1947, to fill the vacancy created by the resignation of Dr. J. Allen Kyle, Houston, August 4, 1947.
7. Appointed June 24, 1946, to fill the vacancy created by the resignation of Dr. Joe Gilbert, Austin.
8. Elected to fill the vacancy created by the resignation of Dr. J. H. Burleson, San Antonio, May 8, 1947.
9. Appointed August 6, 1946, to fill the vacancy created by the death of Dr. H. W. Cummings, Hearne, July 29, 1946.

COMMITTEE ON CANCER

E. W. Bertner, Chairman, Houston (one year).
John D. Weaver, Austin (five years).
David A. Todd, San Antonio (four years).
Christopher B. Carter,[1] Dallas (three years).
Frank C. Beall, Fort Worth (two years).

COMMITTEE ON TUBERCULOSIS

C. M. Hendricks, Chairman, El Paso (four years).
Jesse B. White, Amarillo (five years).
Charles J. Koerth, Junction (three years).
David McCullough, Kerrville (two years).
Howard T. Barkley, Houston (one year).

COMMITTEE ON LIBRARY ENDOWMENT

V. R. Hurst, Chairman, Longview (four years).
F. T. McIntire, San Angelo (five years).
Walter G. Stuck, San Antonio (three years).
O. B. Kiel, Wichita Falls (two years).
J. C. Terrell, Stephenville (one year).

Committee on Public Relations.—George A. Schenewerk, Dallas, Chairman; Harold M. Williams, Fort Worth, Secretary; R. A. Miller, San Antonio; Allen T. Stewart, Lubbock; J. E. Hogan, Big Spring; A. C. Scott, Temple; L. L. D. Tuttle, Houston.

General Arrangements Committee for Annual Session. (All of Houston.)—John H. Wootters, Chairman; Denton Kerr, Vice-Chairman; J. E. Clarke, Charles D. Reece, W. H. Hamrick, James D. Mabry, Howard T. Barkley, Herbert H. Harris, Edward T. Smith.

Committee on Transportation.—Phil A. Bleakney, Harlingen, Chairman; James J. Gorman, El Paso; Charles B. Jones, Wellington; R. N. Graham, Del Rio; W. M. Brook, Lampasas.

Committee on Memorial Exercises.—J. W. Torbett, Sr., Marlin, Chairman; J. H. Caton, Eastland; G. H. Wood, Big Spring; C. E. Patterson, Dallas; William Hibbitts, Texarkana.

Committee on Scientific Exhibits.—X. R. Hyde, Fort Worth, Chairman; W. B. West, Fort Worth; E. W. Grumbles, Atlanta, Cornelius Pugsley, Jr., Houston; C. P. Hardwicke, Austin.

Committee on Revision of Constitution and By-Laws.—Claude C. Cody, Jr., Houston, Chairman; Holman Taylor, Fort Worth, Secretary; F. J. L. Blasingame, Wharton; T. C. Terrell, Fort Worth; E. A. Rowley, Amarillo.

Committee on Medical Education and Hospitals.—Conn L. Milburn, San Antonio, Chairman; James H. Wooten, Jr., Columbus; Henry L. Hilgartner, Jr., Austin; L. M. Garrett, Corpus Christi; E. H. Schwab, Galveston.

Advisory Committee to the Woman's Auxiliary.—M. Ruth Brittain, Crystal City, Chairman; Barton E. Park, Dallas; H. H. Niehuss, Longview; Howard Dudgeon, Jr., Waco; E. F. Miller, Beeville.

Advisory Board to the Texas Society of Medical Technologists.—J. L. Goforth, Dallas, Chairman; Clarence F. Quinn, Texas City; C. B. Young, Tyler.

Committee on Mental Health.—Hamilton Ford, Galveston, Chairman; Paul White, Austin; Abe Hauser, Houston; Perry C. Talkington, Dallas; R. H. Hunter, Palestine.

Committee on Maternal and Child Health.—L. C. Powell, Beaumont, Chairman; Thomas E. Christian, San Antonio; L. L. Travis, Jacksonville; Frank H. Connally, Jr., Waco; Paul L. Brewer, Bay City.

Committee on Venereal Diseases.—T. Alvin Fears, Beaumont, Chairman; J. Leighton Green, El Paso; J. C. Loveless, Lamesa; J. Lewis Pipkin, San Antonio; Frank S. Schoonover, Jr., Fort Worth.

Committee on Industrial Health.—S. D. Coleman, Navasota, Chairman; C. E. Willingham, Tyler; W. H. Sory, Jacksonville; Neil D. Buie, Jr., Marlin; Albert T. Cook, Laredo.

1. Appointed February 24, 1947, to fill the vacancy created by the death of Dr. George T. Caldwell, Dallas, January 20, 1947.

Committee on Military Affairs.—H. H. Latson, Amarillo, Chairman; Truman G. Blocker, Jr., Galveston, Vice-Chairman; Robert L. Price, Sweetwater; Ozro T. Woods, Dallas; Perry J. C. Byars, Jr., San Angelo.

Liaison Committee to Lone Star State Medical, Dental, and Pharmaceutical Association.—E. W. Bertner, Houston, Chairman; H. H. Cartwright, Breckenridge; President B. E. Pickett, Sr., Carrizo Springs; Secretary Holman Taylor, Fort Worth; Jerome H. Smith, San Angelo.

Advisory Council of Past Presidents.—All the Past Presidents of the State Medical Association.

SPECIAL DELEGATE

Texas Hospital Association.—L. L. D. Tuttle, Houston.

OFFICERS OF SCIENTIFIC SECTIONS

SECTION ON GENERAL PRACTICE

L. B. Jackson, Chairman, San Antonio.
H. T. Jackson, Secretary, Fort Worth.

SECTION ON MEDICINE

Merton M. Minter, Chairman, San Antonio.
John S. Bagwell, Secretary, Dallas.

SECTION ON SURGERY

F. J. L. Blasingame, Chairman, Wharton.
Raleigh R. Ross, Secretary, Austin.

SECTION ON OBSTETRICS AND GYNECOLOGY

Allen T. Stewart, Chairman, Lubbock.
Cary A. Poindexter, Secretary, Crystal City.

SECTION ON EYE, EAR, NOSE, AND THROAT

James W. Ward, Chairman, Greenville.
John D. Singleton, Secretary, Dallas.

SECTION ON RADIOLOGY AND PHYSIOTHERAPY

Glenn D. Carlson, Chairman, Dallas.
F. M. Windrow, Secretary, Dallas.

SECTION ON PUBLIC HEALTH

O. B. Kiel, Chairman, Wichita Falls.
William S. Brumage, Secretary, Austin.

SECTION ON CLINICAL PATHOLOGY

S. W. Bohls, Chairman, Austin.
Harbert Davenport, Jr., Secretary, Houston.

SECTION ON PEDIATRICS

V. David Greer, Chairman, Houston.
John E. Ashby, Secretary, Dallas.

Rusk County Added to Councilor District 11.—The House of Delegates at Dallas, last May, amended the By-Laws of the State Medical Association by removing Rusk County from Councilor District 10 and adding it to Councilor District 11. This action will be found in the published Transactions of the meeting, page 128 in the June, 1947, number of the JOURNAL.

This means that Rusk County Medical Society is now a part of the Eleventh Councilor District, and the records of the Central Office have been amended to show accordingly.

The reason for this editorial notice is that in the Membership of the State Medical Association, published in the last June JOURNAL, Rusk County and the Rusk County Medical Society were shown as still a part of the Tenth Councilor District. The failure to remove them from the old district and add them to the new was incident to the considerable mechanical detail and complications always met with in the publication of the June JOURNAL. This year a shortage of help all around added to the jeopardy, and this error was a result.

The Control of Tuberculosis is still a "must" problem to both the medical profession and the lay public, the medical profession in particular. The first and most sustaining and widespread effort at the control of disease occurred in the field of tuberculosis, and it is still a prime problem, particularly in the Southwest, with health departments and tuberculosis associations. Even so, the medical profession has been inclined to relegate the control of this disease to lay organizations and to health officers. The medical profession and the lay public have allowed their attention to be diverted from tuberculosis to the more spectacular diseases, such as cancer and infantile paralysis. There can be no complaint that these and other diseases receive every possible attention, but it must be remembered that tuberculosis is equally as insidious and as deadly as any of the other diseases, and apparently more amenable to successful treatment if full advantage is taken of the advancements made in the science and art of the practice of medicine.

The Committee on Tuberculosis of the State Medical Association has recently been set up on a permanent, overlapping term of office basis, and the personnel of the committee appears to be intensely interested in doing something about tuberculosis control. The committee has asked for the appointment of similar committees in each county medical society in the state, and many of these committees have been appointed and are at work under the direction of the State Medical Association committee. It is for this reason that we call the attention of our readers to the importance of the campaign. Time was when the family physician, who was a general practitioner, assumed to discharge the duties of specialists in public health, and at least make a start down the road to treatment by specialists in any line. The development of public health into a specialty on its own, and the subsidizing of the specialty through health departments, has made a difference in the whole situation. The problem of tuberculosis falls in line with this development, for which reason practicing physicians in any or no special field should be constantly on the lookout for tuberculosis. This statement is almost a platitude because the doctor realizes that tuberculosis, among a number of diseases, may at any time enter

into and complicate any case under diagnosis and treatment. Our committee is not in any sense assuming that practicing physicians are negligent in the matter, but it does feel that a renewed interest in the disease will be most helpful, and it expects the county society committees to aid in bringing about such a renewal of interest.

The general practitioner is still the key man in the treatment and control of the disease in any community. It is clear that routine tuberculin skin tests, and sputum and roentgen examinations will uncover many cases of tuberculosis which would otherwise remain hidden. Certainly the application of these tests is feasible in the admittance of patients to hospitals for almost any sort of treatment. The disease is a medical problem, and it can never be anything else, no matter how many laymen are needed and used in handling the disease, from case-finding through treatment and rehabilitation. No matter how expertly x-ray films are made, for instance, the interpretation of the films should be made by a competent, experienced physician, and the same is true throughout.

Our committee is very much encouraged through the act of our recently adjourned State Legislature in providing two additional centers of treatment for tuberculosis, with a greatly increased number of beds. The committee is also encouraged through the decision of the State Board of Control and Dr. J. B. McKnight, superintendent of the State Tuberculosis Sanatorium, to inaugurate chest surgery at that institution. It is anticipated that the state laws pertaining to the control of tuberculosis will be so amended by the next Legislature as to permit the isolation in state institutions of open cases of pulmonary tuberculosis and the care and treatment of all patients for the length of time necessary to effect a cure, and that in the meantime regulations may be so changed as to permit of approach to that objective. Statistics show that as mortality increases in tuberculosis sanatoriums, the mortality from the disease in homes decreases, which simply means that the jeopardy of the open case of pulmonary tuberculosis is being removed from home communities.

The North Texas and Southern Oklahoma Fall Postgraduate Conference, sponsored by the Wichita County Medical Society, will be held in Wichita Falls, October 14. This one-day conference is the first of its kind offered by the Wichita County Medical Society. It is expected that it will be an annual affair. Guest speakers will be Dr. George Crile, Jr., Crile Clinic, Cleveland, Ohio; Dr. Arthur Grollman, Associate Professor of Medicine, Southwestern Medical College, Dallas; Dr. Edgar Hull, Professor of Medicine, Louisiana State University, New Orleans; and Dr. E. L. King, Professor of Obstetrics, Tulane University, New Orleans.

Sessions will be held in the morning, afternoon, and evening. Subjects to be discussed include treatment of heart disease; disease of the thyroid; treatment of eclampsia; vagotomy in the treatment of peptic ulcer; diagnosis and treatment of obscure fevers; diagnosis and treatment of ectopic pregnancy; and practical endocrine therapy. There will be a luncheon and round-table discussion of the subjects presented during the morning session. The latter part of the afternoon session will be devoted to a round-table discussion of subjects scheduled for that part of the day. This will be followed by a cocktail hour and dinner at the Wichita Falls Country Club.

The Wichita Falls County Medical Society is making special efforts to reach physicians of north and northwest Texas and southern Oklahoma. Further information may be secured from Dr. K. W. McFatridge, Secretary, Wichita County Medical Society, Hamilton Building, Wichita Falls.

The Dallas Southern Clinical Society offers monthly postgraduate courses beginning in September, 1947, in addition to the regular Spring Clinical Conference to be held March 15-18, 1948, in Dallas.

These courses will be presented in collaboration with various organized specialty groups of Dallas, the hospital and clinic staffs, and the faculty of Southwestern Medical College, and will be held in the different hospitals of the city. Surgery, the first course, will be given September 24-26. The guest speaker for this course will be Dr. Robert M. Zollinger, Columbus, Ohio. A postgraduate course in medicine, October 8-10, will be the second in the series, with Dr. Walter C. Alvarez of Rochester, Minn., as the guest speaker. Recent advances in diagnosis and therapy will be stressed in this course.

The last of the postgraduate courses will be held in late January or early February, immediately preceding the regular spring clinical conference, and will be in obstetrics and gynecology. Details of this program have not been worked out at this time, but will be presented at a later date.

No courses are being planned by the Dallas Southern Clinical Society during November and December because the American College of Physicians will hold a sectional meeting

on cardiology in Dallas, November 3-8, and the American Academy of Pediatrics will meet in Dallas, December 8-12.

Registration for the postgraduate courses will be limited, and applications should be accompanied by a registration fee of $25. For further information, write to Miss Thelma Webb, Executive Secretary, 433 Medical Arts Building, Dallas 1.

The Oklahoma City Clinical Society has announced its seventeenth annual fall conference, October 27-30, at the Hotel Biltmore, Oklahoma City. Guest speakers, headed by Dr. Edward L. Bortz, Philadelphia, President of the American Medical Association, represent many medical centers of the United States.

The seventeen other guests are as follow: Drs. Edward Allen, Gynecology, University of Illinois School of Medicine, Chicago; William Arthur Altemeir, Surgery, College of Medicine, University of Cincinnati; Carl E. Badgley, Orthopedic Surgery, University of Michigan School of Medicine, Ann Arbor; A. Carlton Ernestene, Medicine, Cleveland Clinic; Wiley Davis Forbus, Pathology, Duke University School of Medicine, Durham, N. C.; Thomas E. Jones, Surgery, Surgical Division, Cleveland Clinic; H. Dabney Kerr, X-Ray Therapy, College of Medicine, University of Iowa, Iowa City; Linwood D. Keyser, Urology, Roanoke Hospital, Roanoke, Va.; Edward Lacy King, Obstetrics, Tulane University School of Medicine, New Orleans; Frank D. Lathrop, Otolaryngology, Lahey Clinic, Boston; George M. Lewis, Dermatology, Cornell University School of Medicine, New York; Samuel F. Marshall, Surgery, Lahey Clinic, Boston; Herbert C. Miller, Pediatrics, University of Kansas School of Medicine, Kansas City; Edith L. Potter, Pathology, University of Chicago School of Medicine; C. Wilbur Rucker, Ophthalmology, Mayo Foundation, Graduate School of University of Minnesota, Minneapolis; Cyrus C. Sturgis, Medicine, University of Michigan School of Medicine, Ann Arbor; Elmer G. Wakefield, Medicine, Mayo Foundation, Rochester, Minn.

The conference will be highlighted by general assemblies, postgraduate symposiums, a clinical pathological conference, round-table luncheons, and a clinical dinner. A special feature, the President's Dinner, honoring the President of the American Medical Association and the associate members of the Oklahoma City Clinical Society, will be held Monday evening, October 27. There will also be the regular annual smoker, or stag party, a period of fellowship and entertainment which is always enjoyed by those attending.

The registration fee will be $15, which covers all features, including the luncheons and dinner meetings. The Executive Secretary, 512 Medical Arts Building, Oklahoma City, will furnish additional details.

The University of Texas Postgraduate Course schedule for 1947-1948 has been announced by Dr. T. G. Blocker, Jr., director of the Postgraduate Division of the Medical Branch. These courses begin in October, 1947, and extend through April, 1948. A pediatric conference will be held in Houston, from October 13 through 18. This will be followed by courses at Galveston in internal medicine in December; surgery in January; fundamental medical sciences in February; and physical medicine, obstetrics, and pediatrics in March. Tumor conferences will be held in November, 1947, and in January and April, 1948.

According to Dr. Blocker, more than 1,250 doctors are expected to attend these courses. In addition to the slated conferences, other courses may be arranged upon request.

Speakers for county and district medical society meetings and other medical meetings will also be furnished by the Postgraduate Division upon request, Dr. Blocker states.

A tentative schedule of the refresher courses for 1947-1948 follows:

Pediatrics, October 13-18.
Tumor Conference, November 12-15.
Internal Medicine, December 1-13.
Surgery, January 12-17.
Tumor Conference, January 24.
Fundamental Medical Sciences, February 23-28.
Physical Medicine, March 1-5.
Obstetrics, March 8-12.
Pediatrics, March 15-20.
Tumor Conference, April 28-May 1.

The pediatrics conference in October will be a cooperative venture. The first four days will consist of a conference under the joint sponsorship of the University of Texas Child Health Program, the Maternal and Child Health Division of the Texas State Board of Health, Baylor University College of Medicine, and other Houston groups. Some of the details of this conference will be found on page 342 of this number of the JOURNAL. The last two days of the pediatrics program will be held in conjunction with the annual meeting of the Texas Pediatric Society.

Additional information concerning the University of Texas postgraduate activities may be secured from Dr. Blocker.

Mr. Jeff L. Reese Has Retired from the employment of the State Medical Association of Texas, after an unbroken service of twenty-four years as legislative counsel, by whatever name the position has been called

from time to time. Mr. Reese has, in fact, been an executive of the State Medical Association during practically the entire period of his employment. His grasp of the scope, detail, and purpose of the work of the Association has all along been such that no hesitancy was felt by those in authority in turning the Central Office over to his management during any period of time. His employment initially was incident to his knowledge of political and legislative affairs, and his acquaintance with and friendship for those who had to do mainly with these matters. Because of his adaptability to this type

MR. JEFF L. REESE

of work, it has been his principal role and responsibility, but it has not by any means been exclusively his task. He has had many duties thrust upon him, and has met every demand made of him. In late months, he has had complete charge of the radio service and the relocation activities of the Association, to name only two of his other responsibilities.

Mr. Reese was born March 5, 1885, at Talpa, Texas. He was educated in the schools of his community, in addition to which he was graduated from a business college. At the age of 24, he was elected Treasurer of Coleman County, in which position he served for four years, retiring voluntarily at the end of his term. He served for four years in the State Treasury Department, at Austin, and then for two years in the State Comptroller's Department. Following this connection, Mr. Reese became chief clerk of the State Health Department, serving in that capacity under state Health Officers C. W. Goddard, Oscar Davis, M. M. Carrick, and John H. Florence. He resigned this employment to accept service with the State Medical Association of Texas in November, 1923.

Mr. Reese has been married for more than forty years. A son, Jeff L. Reese, Jr., with his wife and two daughters, lives in Austin, in which city Mr. and Mrs. Reese, Sr., will make their residence.

The long, competent, loyal, and faithful service of Mr. Reese is appreciated, and his multitude of friends in the Association wish him well.

SYMPOSIUM ON THE Rh FACTOR

I. Rh FACTORS AND THEIR RELATION TO OBSTETRICS

S. FOSTER MOORE, JR., M. D.
SAN ANTONIO, TEXAS

Much confusion exists concerning Rh, due largely to the premature publication of data which could not be substantiated. Nevertheless, certain factual knowledge and techniques have emerged during the past five years which permit an evaluation of the significance of the Rh factors and their relation to obstetrics and which provide some means of coping with the problem.

The lay press has created fear and panic in the minds of many prospective parents by ill-advised publicity concerning Rh. It was ill-advised because it presented a stark dilemma without a solution. Fear is still present in the minds of so-called "Rh-incompatible" couples, and its consequences are serious. Many couples hesitate, or decline, to have a second child or even a first. Thus, many children are not born who would be quite normal. When it is realized that the more intelligent and educated persons are most likely to be concerned about the problem, and that in this group the birth rate is already dangerously low, the social and economic implications become alarming. It is therefore incumbent upon us as physicians to evaluate and add to our knowledge of the

Read before the Section on Obstetrics and Gynecology, State Medical Association of Texas, Annual Session, Dallas, May 6, 1947.

An abstract of the discussion of this paper follows the third paper of the symposium.

Rh phenomena so as to be in position to advise those who seek our aid and to disseminate factual information. At present there are sufficient facts to enable us to speak on the subject with some confidence.

It is likely that most of us were too concerned with our own and world affairs in 1941 and 1942 to be aware of the significance of the discovery of a new isoagglutinin which soon became known as the "anti-Rh agglutinin." Levine first pointed out the role of the "Rh factor," or antigen, in the production of erythroblastosis fetalis. In so doing, he focused attention upon a problem which still has no perfect solution, and which arises in appoximately 10 per cent of obstetrical patients. Since 85 per cent of all whites are Rh-positive and 15 per cent Rh-negative, about ten Rh-negative women married to Rh-positive men may be expected among each hundred patients. It is these so-called "Rh-incompatible" couples that give concern, with rare exception.

THEORY OF THE RH FACTORS

It is no longer possible to speak of Rh as a single factor; the existence of at least three, and probably more, basic "factors," which are designated usually as Rh_0, Rh′, and Rh″, must be recognized. These factors are antigens, one or more of which are contained in the red cells of persons whose blood is called "Rh-positive." Persons whose blood does not contain any of these antigens are called "Rh-negative." These Rh factors are like the A and B antigens of the Landsteiner blood group, except that they have no corresponding natural antibodies. However, they may provoke an antibody reaction against themselves if introduced into the body of a person lacking them. In fact, Fisher has designated them as C, D, and E, respectively, and it is hoped that this designation will be accepted for the sake of simplicity.

Recently, Levine pointed out the existence of the so-called "Hr factors" which are antithetic to the Rh factors and, in a similar way, identified as Hr_0, Hr′, and Hr″. Cells which lack one or more of the Rh factors will contain the corresponding Hr factor; that is, the cells of an Rh-negative person lacking all the Rh factors will contain all the Hr factors.

The Rh antigen is inherited as a dominant characteristic and follows genetically the law of Mendel. An Rh-positive person may be either homozygous or heterozygous, but the Rh-negative person is, of course, always homozygous. In a mating between a homozygous Rh-positive person and an Rh-negative person, all of the offspring will be Rh-positive; whereas, 50 per cent of the offspring of a heterozygous Rh-positive person and an Rh-negative person will be Rh-negative. It follows that the mating of two Rh-negative persons always will result in Rh-negative offspring.

An antibody reaction, known serologically as "isoimmunization," may be produced in an Rh-negative person at any time by the infusion or transfusion of Rh-positive blood, and it is thought that very small quantities of blood can effect this result in susceptible persons. Applied to obstetrics, the antigen may gain access to the blood of an Rh-negative mother pregnant with an Rh-positive child. Precisely how this phenomenon occurs is not fully understood, but it is known that the condition occurs only rarely with the first pregnancy. Wiener has theorized that fetal erythrocytes reach the maternal circulation only at the time of labor and delivery; whereas Levine believes that the antigen in the fetal red cells somehow passes the placental barrier, in minute quantities, during the latter half of pregnancy. There is evidence to support the belief that both these phenomena take place and that each plays its part.

When isoimmunization has occurred, there are present in the bloodstream of the immunized person certain antibodies identified as "anti-Rh agglutinins." Associated with pregnancy, these agglutinins are capable of exciting in the fetus a greater or lesser degree of hemolytic disease. This disease has been known, broadly, as erythroblastosis fetalis, although its clinical features may vary considerably and be manifested as anemia, jaundice, or hydrops fetalis. The pathologic physiology of this disease would itself justify an essay and will not be discussed other than to say that the process may result in intrauterine death of the fetus any time during the last half of pregnancy, or may produce such morbid change that neonatal death frequently ensues. A certain percentage of infants may survive and show kernicterus, or manifest such symptoms as feeblemindedness or spasticity.

EVALUATION OF Rh

Viewed in the light of its import to those affected, the Rh problem is grave. However, statistics now tend to create less alarm than the existence of the 10 per cent Rh-incompatible marriages would seem to warrant. In the first place, the incidence of hemolytic disease does not seem to be greater than about 1 in 300 deliveries and does not account for more than 8 to 10 per cent of total fetal mortality. A first child, or even a first viable child, rarely manifests hemolytic disease unless the mother has been immuniz-

ed previously by infusion of Rh-positive blood. Furthermore, there is no evidence to indicate that congenital abnormalities such as asphyxia-neonatorum, intracranial hemorrhage, habitual abortion, toxemia of pregnancy, placental abruption, or most of the other fetal-maternal accidents are related to the Rh factor. Finally, even among Rh-incompatible couples, hemolytic disease does not occur in more than 1 in 20 pregnancies. It now appears that a previous pregnancy, even when the child is Rh-positive, is not nearly so apt to cause immunization as a transfusion with Rh-positive blood, since the amount of antigen (in the form of red cells) is so much greater in the transfusion. These facts do much to allay the panic which attended the initial reaction to the discovery of the Rh factor.

APPLICATIONS OF THE Rh THEORY

In practice, physicians must deal with the Rh problem to the best of their ability with the means at hand. Certainly, every pregnant woman should have her Rh determined early in gestation. If nothing else, this would facilitate an emergency transfusion should the need arise. If she is Rh-positive, she can be reassured and no further studies done. If she is Rh-negative, the Rh of her husband should be determined. If her husband is also Rh-negative, no problem exists, but if her husband is Rh-positive, it is well to know the Rh of any previous children. If she has had no pregnancies which have gone beyond the fifth month, or if her existing children are found to be Rh-negative, little concern need be felt, provided that she gives no history of having received a transfusion of blood which was not known to be Rh-compatible.

By this relatively simple procedure many Rh-incompatible couples can be eliminated, for all practical purposes, from suspicion of hemolytic disease. However, there will remain those who (1) have had a previous child who was stillborn or died and whose Rh is unknown, (2) have had a previous child known to be Rh-positive, (3) have received a transfusion of possible or known Rh-positive blood, and (4) have had a previous child who was known to have, or was suspected of having, hemolytic disease. In these cases, the obstetrician must suspect the definite possibility of a fetal catastrophe and should proceed with additional laboratory studies.

Fortunately, reliable laboratory methods are available which will provide at least a qualitative determination of the presence of anti-Rh agglutinins and which are of much aid in following suspicious cases. These tests are concerned with the determination of the anti-Rh agglutinins in the maternal blood. These agglutinins are known as "atypical agglutinins" and "blocking bodies," or as "immature" and "mature" agglutinins, respectively. The titer in which these agglutinins appear apparently is of less significance than their consistent presence, while sudden rises in titer seem to be of prognostic value. Tests for anti-Rh agglutinins should be made at about sixteen weeks gestation, if possible, and once each four weeks thereafter until the twenty-eighth week. From the twenty-eighth to the thirty-sixth week, tests should be made each two weeks, and from the thirty-seventh week, tests should be made weekly until the patient is delivered. It should be kept in mind that agglutinins may be "carried over" from previous immunization, and when detected early in pregnancy in dilutions, they may have no bearing upon prognosis.

The initial appearance of agglutinins before the twenty-sixth week, and especially any significant rise in titer, warrants a grave prognosis for the fetus. If Rh antibodies first appear after twenty-eight weeks hemolytic disease may be expected, but the prognosis for the fetus is not so grave as when it is exposed to the effects of the agglutinins for the longer time. Occasionally, the obstetrician may be justified in interrupting pregnancy at thirty-six weeks, or a little later, to avoid additional exposure of the fetus to the agglutinins. This is true, especially, when the child is particularly valuable, and when there is reason to believe that the fetus is grossly normal and has not been exposed to the Rh antibodies for longer than ten weeks. The method of interrupting pregnancy will depend upon the obstetrical condition which exists, but abdominal section is certainly to be considered.

Of particular concern is the woman who has had one or more children who have manifested or have died of hemolytic disease. She will want to know what her chances may be of ever having a normal child. Generally speaking, every Rh-positive child which she conceives will have hemolytic disease. Only if there is a possibility of her conceiving an Rh-negative child may the fetus be expected to be unaffected. This, of course, will depend upon the husband's Rh genotype. If he is a homozygous Rh-positive, all of his children will be Rh-positive. On the other hand, if he is heterozygous, 50 per cent of his children may be expected to be Rh-negative. There are two ways of determining the genotype. If he has had one Rh-negative child, the husband is heterozygous. If he has had no children, or if his children are Rh-positive his

Hr factor may be determined. Unfortunately, anti-Hr serum is difficult to obtain, but an Hr determination is of great value. If the cells of the husband lack one of the Rh factors they will contain the corresponding Hr factor; that is, they will be Hr-positive for that particular factor and he can be expected to be heterozygous. It is doubtful whether in these cases the interval between pregnancies is of any importance. Levine has recommended that an interval of two years be allowed between pregnancies, but his reasoning is not convincing.

We have not, in our series, failed to predict hemolytic disease in a single infant which later demonstrated it, nor have we anticipated the disease in any infant which failed to show it. This record speaks well for the methods now in use by laboratories experienced in the technique, and such methods at least enable obstetricians to be prepared for the condition when it occurs and to make a favorable prognosis in the majority of cases. The following cases are presented because they illustrate some of the problems encountered in the management of Rh cases:

CASE REPORTS

CASE 1.—Mrs. R. K. W., age 26, gravida 3. Her first child, age 5, was living and well. Her puerperium had been complicated by late uterine hemorrhage, and she had received a 500 cc. transfusion of whole blood. Her second pregnancy had been terminated two and one-half years previously, at thirty-six weeks, by cesarean section because of placenta previa. The child died in five days of erythroblastosis. At twenty weeks of her third pregnancy, which she strongly desired, tests were made and the following was determined: the husband, Rh_0' positive and Hr′ negative; the first child, Rh positive; and the patient, atypical agglutinins of mature variety (blocking bodies) present in titer of 1:16 against Rh_0' and Rh_0 cells. These tests indicated that the husband probably was homozygous and that the patient probably was actively producing antibodies early in this pregnancy, although it could not be determined whether the "block" was new or carried over from her previous pregnancy. Subsequent tests were consistently positive for Rh antibodies, with a gradual rise in titer to 1:64. At thirty-six weeks she was delivered by cesarean section of a 5.5 pound child who manifested severe erythroblastosis, but who survived after seven transfusions and is now living and well.

CASE 2.—Mrs. W. H. R., age 25, gravida 2, had had her first pregnancy terminated five years before at twenty-four weeks by vaginal hysterotomy because of abruption of placenta. She had received a transfusion of 55 cc. of whole blood from her Rh-positive husband. The child died of prematurity. The mother was found to be Rh-negative and her husband Rh-positive at her first visit with the second pregnancy, and at sixteen weeks tests were made for antibodies. These were found to be present in the form of "mature" agglutinins or "blocking bodies" in a dilution of 1:64. Subsequent tests indicated the presence of the agglutinins in dilutions up to 1:256, and at thirty-six weeks she was delivered by cesarean section of a 5.5 pound child which appeared normal at birth. A blood count at birth showed immature erythrocytes, and hemolytic disease was anticipated. In spite of transfusions, the child developed marked jaundice and died on the fourth day with a normal blood count. Significant autopsy findings included marked kernicterus.

DISCUSSION

Both the patients showed evidence of isoimmunization early in pregnancy (presumably resulting from previous transfusion) and in neither case could a favorable outcome be expected for the baby. The patient in case 1 had had a previous cesarean section and it was intended to terminate this pregnancy by section, also. In this instance, delivery merely was accomplished four weeks early. In case 2 cesarean section was chosen as an elective procedure in the interest of the fetus because obstetrical conditions were not favorable for premature induction of labor. There is some question as to whether or not this was justified, since there was reason to suspect severe hemolytic disease, and the chances of securing a healthy child were slight.

It is unlikely that Mrs. R. K. W. (case 1) ever can have a child free of hemolytic disease and, since she has two living children, she will probably not attempt another pregnancy. However, Mrs. W. H. R. (case 2) has no living children and is anxious to try another pregnancy. Unless it can be established that Mr. W. H. R. is a heterozygous positive from Hr determinations, her chances of ever having a living child may be considered nil. It is unfortunate, in this case, that the exsanguination-replacement technique was not available for the treatment of the baby which resulted from this pregnancy. However, if Mr. W. H. R. proves to be heterozygous, the wife may be advised to try again in the hope that she may conceive an Rh-negative child.

CONCLUSION

1. The Rh problem is a major one, but when properly evaluated, does not appear to be cause for panic on the part of every Rh-incompatible couple.

2. Rh determinations should be made on every pregnant woman and, when indicated, on her husband and children.

3. Laboratory methods for determining isoimmunization are reliable and should be employed in every suspected case.

4. When hemolytic disease is anticipated, there is no satisfactory means of preventing it, but prompt treatment can be given to the child if it is born alive.

5. No well-formulated plan for managing cases of anticipated hemolytic disease is generally acceptable, but in some cases it would seem desirable to deliver these children four weeks prematurely to avoid prolonged effect

from the antibodies which frequently results in antepartum death.

6. Once isoimmunization has occurred, the prognosis in subsequent pregnancies, except when the fetus is Rh-negative, is practically hopeless at the present time.

7. In the future, the incidence of hemolytic disease will be decreased automatically, when the practice of sensitizing Rh-negative persons to the Rh antigen by means of Rh-positive blood transfusions is avoided.

REFERENCES

1. Belson, M. O.: Rh Factor in Obstetrics, Am. J. Obst. & Gynec. 52:106-109 (July) 1946.

2. Burnham, L.: Common Etiology of Erythroblastosis and Transfusion Accidents in Pregnancy, Am. J. Obst. & Gynec. 42:389-397 (Sept.) 1941.

3. Cole, J. T.: Application of Our Knowledge of Rh Factor, Am. J. Obst. & Gynec. 53:181-189 (Feb.) 1947.

4. Hettler, W. F.: Unpublished data, 1946.

5. Hunt, A. B.: Rh Factor in Abortion, Am. J. Obst. & Gynec. 53:467-473 (March) 1947.

6. King, E. L., and Davenport, J. W., Jr.: Some Clinical Aspects of Rh Factor in Obstetrics, Am. J. Obst. & Gynec. 52:917-925 (Dec.) 1946.

7. LaVake, R. T.: Serology and Obstetrics, Am. J. Obst. & Gynec. 53:459-466 (March) 1947.

8. Levine, P.; Burnham, L.; Katzin, E. M.; and Vogel, P.: Role of Iso-Immunization in Pathogenesis of Erythroblastosis Fetalis, Am. J. Obst. & Gynec. 42:925-937 (Dec.) 1941.

9. Levine, P., and Waller, R. K.: Erythroblastosis Fetalis in Firstborn; Prevention of Its Most Severe Forms, Blood 1:143-155 (March) 1946.

10. Norcross, J. W.: Significance of Rh Factor, Lahey Clin. Bull. 3:212-216 (Jan.) 1944.

11. Page, E. W.; Hunt, M.; and Lucia, S. P.: Antepartum Prediction of Hemolytic Disease of Newborn, Am. J. Obst. & Gynec. 52:794-796 (Nov.) 1946.

12. Philpott, N. W.; Latour, J. P. A.; and van Dorsser, G. J. E.: Review of Cases of Rh Iso-Immunization during Past Five Years in Royal Victoria Montreal Maternity Hospital, Am. J. Obst. & Gynec. 52:926-935 (Dec.) 1946.

13. Rice, D. B.: Rh Factor; Its Present Status and Clinical Importance, West, J. Surg. 55:170-182 (March) 1947.

14. Rogers, G. E.: Bull. Staff Meetings, Univ. Minnesota 18:139, 1946.

15. Snyder, L. H.: Principles of Heredity, ed. 3, Boston, D. C. Heath and Co., 1946.

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MENTAL HEALTH FOUNDATION

The membership of the National Mental Health Foundation, incorporated about a year ago, has grown to nearly 3,000, according to Harold Barton, executive secretary. The Foundation has cooperated with existing mental hygiene groups, civic, and church organizations to enlighten the public on the proper care and treatment of the mentally ill, to effect legislative reforms for improvement of state mental health programs, and to publicize the evils that exist in state hospitals for the mentally ill.

The Foundation is placing particular emphasis on public education to (1) give the public a basic understanding of mental afflictions in an effort to remove the stigma and superstition now surrounding mental handicaps; (2) publicize conditions and possibilities in public institutions; (3) mobilize public support for local, state, and national efforts through active membership in a coördinated, nationwide, citizens' mental health movement; (4) provide public officials with reference material for planning effective legislative programs for prevention, treatment, and care of mental disorders.

Anyone interested may join the Foundation as a voting member by payment of $1 membership fee, to be mailed to the Foundation's national headquarters, 1520 Race Street, Philadelphia 2.

SYMPOSIUM ON THE Rh FACTOR
II. Rh ANTIGENS AND ANTIBODIES

J. M. HILL, M. D.
and
SOL HABERMAN, Ph. D.
DALLAS, TEXAS

To the obstetrician some knowledge of the different antigens comprising the Rh group, together with the laws of their inheritance, is necessary in order to answer the questions of his patients regarding the much publicized Rh factor. In addition to information concerning the antigens some basic facts about the antibodies stimulated by the Rh antigens is likewise necessary for diagnosis, treatment, and prognosis of Rh isoimmunization. Fortunately, recent knowledge in this field has considerably clarified the Rh problem.

While the A and B factors of red blood cells are fairly well understood, it is not generally appreciated that there are many other antigens which may be contained in the red corpuscles and which are determined by genes according to the laws of heredity. Fortunately, many of these red cell antigens, such as the M and N, are not of clinical significance, while others are sufficiently rare to be of minimal importance. Unfortunately, this is not the case with the Rh-Hr or CDE-cde blood antigens. It is now known that the so-called Rh factor is considerably more complicated than a single factor which may be present or absent. Until recently these Rh subtypes appeared to be too complex in their relationships and designation for ordinary clinical application. However, the Fisher-Race[4, 5] theory of inheritance and the newer nomenclature[7, 14] has considerably clarified the knowledge of these antigens. According to this theory there may be a minimum of three or a maximum of six antigens of the Rh group in a given person's red cells. By this system also the place of the Hr factors becomes clear for the first time. These antigens are considered to be determined by three pairs of genes with the designations C, D, and E to denote location of the genes on the chromosome pairs. For example, on one of a pair of chromosomes the possibilities may be indicated as follows:

C or c D or d E or e.

Since each person draws his inheritance through paired chromosomes, one from the father and one from the mother, a second chromosome with similar possibilities for

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An abstract of the discussion of this paper follows the third paper of the symposium.

different CDE-cde gene arrangements is also included in the cells of each person. Each gene of the CDE-cde (Rh-Hr) system has the property of assuring the presence of the corresponding antigen in the person's erythrocytes. Since every person has six such genes (three pairs) he may have six antigens when all genes are different (heterozygous) or only three when each pair is identical (homozygous). The different Rh (or CDE-cde) subtypes simply represent the different combinations of antigens which result from the possible gene arrangements on each chromosome of the pair. For example, erythrocytes formerly considered as Rh negative really contain three different antigens c, d, and e rather than an actual lack of antigens. These were formerly designated as the Hr antigens. Their former obscurity is considerably cleared up when it is realized that these are merely alternative antigens determined by alternative genes (c, d, or e). In such a case, of course, inheritance is by way of identical gene arrangements from both father and mother, namely, cde from each, giving the genetic formula, or genotype, cde-cde, which is known as Rh-negative.

Since the capital letters designate the antigens which were formerly indicated by various Rh symbols, it can be seen that any possible combination of capital and small letter CDE antigens may occur. Fortunately, only three of the combinations are common when referring to a single chromosome, namely, CDe, cde, and cDE. All other combinations such as Cde, cDe, and so forth, are considerably rarer. Of course, when the two inherited chromosomes, maternal and paternal, are considered, the scheme becomes somewhat more complicated, but each combination can still be plainly designated according to the inherited antigens from both father and mother. While it is quite obvious that such a system of antigens inherited by three pair of genes and yielding up to six different antigens is considerably more complex than the ABO system, nevertheless the basic scheme is relatively clear. Furthermore, the designation of each antigen with a characteristic letter which can also be used to designate the corresponding gene, and finally the corresponding antibody, considerably facilitates an understanding of this problem for clinical purposes.

In the case of a patient who has had a child with erythroblastosis and who wishes to know what future pregnancies may bring, it is of great importance to the obstetrician to understand what genes may be inherited from the father. For example, the Rh-negative mother having the genetic formula cde-cde can only transmit the c, d, and e genes. If the father reacts positively with the standard Rh diagnostic serum (anti-D) and has the gene arrangement, or genetic formula, CDe-CDe it will be quite apparent that any child of such a mating will have to possess one gene arrangement from the mother and one from the father resulting in CDe-cde. Thus, every child will of necessity be Rh-positive (D+) and will have erythroblastosis once sensitivity is established. On the other hand, if the father has the gene arrangements CDe-cde it will be seen that there is a 50-50 chance for the child to lack the capital letter antigens and to carry only the cde-cde antigens (therefore being Rh-negative), thus having no difficulty as a result of anti-D or C antibodies.

The great convenience of the Fisher-Race system of nomenclature is the fact that a given letter corresponds to the antigen and the gene. This is very convenient when applying the law of immunology that persons may be immunized only against those antigens which they do not normally possess. Application of this rule will tell at a glance what persons may be immunized by red cells of a given CDE-cde antigenic makeup. The person who inherits all six antigens by inheriting a different gene at each locus from father and mother will, of course, be unable to produce antibodies against any of the six antigens ordinarily encountered. The gene arrangement, or genotype, CDe-cdE would represent such a person. On the other hand, it is easy to see why the Rh-negative or cde-cde person may be immunized so easily by the common Rh-positive (D+) cells such as CDe. In the case of the mother lacking the C and the D antigens, immunization against either C or D or both may occur. It may also be understood how a person having the genes CDe-CDe may be immunized against c or d. This is a so-called Hr isoimmunization, and when it occurs the consequences are exactly the same as in the case of the more usual Rh antibodies.

The practitioner may not want to concern himself about just what methods are employed to detect the presence of the genes and antigens. It is sufficient to say that the laboratory can detect the antigens C, D, E, and c by sera now available. In this connection, two particular antisera stand out in their usefulness. First, the anti-D serum of 85 per cent specificity is the standard, or better yet, the diagnostic serum (D for diagnostic). This fortunate specificity of the anti-D serum is due to the fact that all but a very small percentage of antigen combinations

made up of the capital letters contain the D antigen. The second important serum is the anti-c, which can be used to determine heterozygosity of the father in predicting the outcome of pregnancies in previously isoimmunized persons. The only clinically important exception to this rule is the gene arrangement CDe-cDE, which makes up from 12 to 14 per cent of the population. For fathers who have this genotype the rare and not yet generally available anti-e serum would be required.

In connection with the determination of gene arrangements or genotypes, it is only fair to state that such genotypes cannot be determined with absolute accuracy except by family studies. However, the laboratory which is equipped with the generally available sera can determine genotypes with a fairly high degree of accuracy. This probable genotype estimation, as we have termed it,[7, 11] can be made by betting on the odds, so to speak, of the commoner gene arrangement as compared to the rarer. Fortunately the odds in favor of a correct assumption are usually better than 100:1 but in any event are better than 12:1. We have found that patients seem to be satisfied when such odds are quoted to them in explaining the accuracy of our prognosis when answering their questions.

From the foregoing explanation it is apparent that all persons possess in their red corpuscles antigens which may be designated by the capital or small letters C, D, and E. No one lacks these antigens completely; what was formerly considered an Rh-negative person possesses the c, d, and e antigens and reacts negatively to the anti-D or diagnostic serum. Under this system the formerly troublesome rare types such as Cde-cde or cdE-cde become understandable in their reactions. Such persons are not Rh-negative in the ordinary sense because they do have large letter antigens. On the other hand, they do not react positively to the anti-D or diagnostic serum unless it also contains mixtures of anti-C or E as the individual case may require. It can also be seen that the so-called intra-group reactions which formerly were difficult to explain for the most part merely consist of situations in which two persons, both reacting positively with the D serum, nevertheless are capable of immunizing each other. For example, a red cell containing the CDe antigens and reacting positively to the anti-D serum may be capable of immunizing a person whose red cells contain the c, D, and E antigens but which obviously lack the C antigen. Such a recipient of blood, whether through transfusion or pregnancy, might build up anti-C antibodies. Such cases have been seen and reported, but happily they are considerably rarer than the usual situation in which antibodies are produced by the person containing red cells having only the cde antigens (Rh-negative). In considering the possible isoimmunization of one person with the red cells from another, it must always be borne in mind that not all situations where immunization could theoretically occur will actually result in such immunization. Our own experience in this connection, as previously reported in the JOURNAL,[8] has indicated that less than 10 per cent of Rh-negative mothers having Rh-positive children develop detectable antibodies, even when studied with the most recent and sensitive methods.[6]

The antibodies that may be produced by various CDE-cde (or Rh) antigens correspond in specificity to the stimulating antigen. In other words, there may be anti-C, anti-D, anti-E, anti-c, anti-d, anti-e antibodies or, in some situations, combinations of these antibodies. The anti-D antibody, often accompanied by a variable proportion of anti-C, is most commonly found. Pure anti-C, E, and c are considerably more infrequent but probably can be made generally available for diagnostic purposes. For example, we have been able to produce and have on hand more than 8,000 ampules of anti-c (formerly designated anti-Hr′).

Another method of designating antibodies by the specificity is to describe them according to the percentage of persons in the general population whose red cells are agglutinated by the serum containing the antibodies. For example, the 85 per cent serum (anti-D), which has been known as the diagnostic Rh serum, corresponds closely in specificity to the original Rh serum described by Levine and Stetson[13] and to the anti-rhesus serum produced by Landsteiner and Wiener[12] in animals. The anti-C serum was originally designated as a 70 per cent serum, the anti-c as an 80 per cent serum, and so forth. This method of designation, of course, is effective when a newly discovered serum is tested against random blood samples and before its exact specificity in terms of corresponding antigens is definitely known. Such designation is useful only for research purposes when new sera are discovered. For clinical usage the designation should correspond to the antigen, and in this respect the new CDE-cde terminology is especially advantageous.

Another important way in which antibodies may be designated is not related to their specificity or to the antigen with which

they combine but to the manner in which they act. Initially, Rh antibodies were detected by the use of the classical agglutination test with suspension of the red cells in saline solution. This procedure detected the so-called classical agglutinin. Later Wiener[15] and Race[4] showed that there were other Rh antibodies which would not agglutinate in saline solution but which would coat the red cells and combine specifically with the antigen in the corpuscle. This combination saturated the combining groups or haptens so that there was no remaining affinity for other agglutinins. A special technique called the blocking test was developed by Wiener[15] by which such otherwise inapparent antibodies could be detected. This type of antibody, characterized by its failure to cause agglutination with the ordinary technique and its ability to prevent further combination with the classical agglutinin, was called the "blocking antibody." Later it was shown that other techniques could be employed to detect this antibody by changing the suspension medium from saline solution to a colloidal medium such as albumin, human serum, and so forth. The techniques employing the principle that antibodies which do not agglutinate in saline suspensions will agglutinate suspensions of red cells in colloidal solution include Diamond's slide test,[2] Diamond's albumin test,[3] Wiener's "conglutination" test,[16] and several others. These authors, however, continued to apply the term "blocking antibodies" to the antibodies detected by such methods.

The recognition of a third variety of antibody which would neither agglutinate in saline solution nor block according to the Wiener test was first reported by Hill and Haberman.[8, 9] Characterization of a third variety of antibody was made possible through utilization of the Coombs, Mourant, and Race[1] technique employing a completely different approach. By this method, which we have called the developing test, an anti-human globulin serum is used to detect the presence of any human immune globulin adsorbed on the erythrocytes. It is not necessary for this immune globulin to make itself known in any other way. It need not agglutinate in saline or in dehydrating colloidal suspension or act in any other manner. It is necessary only that the immune globulin or antibody adsorb specifically on the corpuscle and remain attached through three washings with saline solution. The addition of anti-human globulin serum will then cause agglutination through its attraction for the human globulin antibody. A series of studies which we have undertaken[8, 9, 10] has convinced us of the reality and importance of this third order of antibodies. Because these antibodies are hidden to ordinary techniques and because they not only fail to agglutinate in saline suspensions but in some instances fail to agglutinate under any conditions we have been able to apply thus far, we have proposed the term "cryptagglutinoids" to designate this group of antibodies.[11]

At present, then, we recognize the classical saline agglutinin which agglutinates the proper red cells in saline suspension, the blocking antibody which saturates and blocks the antigen in the red cells but fails to agglutinate in saline solution, and, finally, the cryptagglutinoid which neither agglutinates in saline nor blocks the combining sites or haptens of the antigens. We have found that such cryptagglutinoid antibodies may cause agglutination in the capillary method of Chown. A still higher percentage of these cryptagglutinoids will also agglutinate with Diamond's useful albumin test. However, a small proportion of such antibodies fail to agglutinate by any technique yet employed, including the albumin method. Such antibodies, however, will be demonstrated by the use of the anti-human globulin serum (developing test). Such antibodies also have been demonstrated to have true antibody action, namely, hemolytic activity.[8, 9, 10]

Since all three varieties of antibodies appear to have hemolytic activity of comparable degree, it is obvious that each variety of antibody will have equivalent clinical significance. It is for this reason that the obstetrician is interested in knowing that he can depend upon his laboratory to detect any or all of these varieties of antibodies in the serum of a patient or adsorbed on the cells of the newborn. It is also apparent that utilization of these techniques will be required to give an accurate picture of the titer of antibodies in the pregnant woman in order to have some idea of the severity of isoimmunization in a given case. Without this information, of course, it would be difficult to be adequately prepared to employ the presently available methods for treatment of the newborn such as exchange transfusions, and so forth.

Finally, investigations recently conducted in this laboratory[11] suggest that one additional factor must be taken into account in attempting to correlate the severity of clinical disease with the degree of isoimmunization to the CDE antigens. Hemolytic experiments have shown that not only the strength or titer of the antibody determines the amount of hemolysis but also the number of antigen molecules present in the red cells, in

other words, the number of points of hemolysis involved for a given type of cell and antibodies present. These experiments have indicated that the number of points of hemolysis can be correlated with the number of different antigens present with which antibodies may combine, and whether or not such antigens are present in the double dose or single dose. By double dose is meant that the antigen is determined by two genes (homozygous) and by single dose that the antigen is determined by one gene (heterozygous). For example, the red cell whose antigens are determined by the genetic formula CDe-CDe will show twice as much hemolysis when treated with the anti-D antibody as the cell determined by the genetic formula CDe-cde. In other words the first cell would have to have twice as many of the D antigen molecules as the second cell, which has both D and d antigens present. Similarly when two antibodies are present, as is often the case, there will be twice as much hemolysis as in the case where one antibody is acting on the antigen. For example, anti-C and anti-D antibodies acting upon a cell having the double dose of C and D antigens (CDe-CDe) will give twice as much hemolysis as the cell having the double dose of the D antigen only (cDe-cDe), and four times as much hemolysis as the cell having a single dose of one antigen only, for example, D (genotype cDe-cde). Obviously, more severe effects of hemolysis may be expected when several points of hemolysis (multiple antibodies combining with corresponding antigens) exist and consequently more severe clinical forms of erythroblastosis may likewise be anticipated.

From this presentation it may be seen that the Fisher-Race theory of inheritance and nomenclature may greatly clarify the Rh problem. It is particularly advantageous for clinical use in that it permits a better understanding of relationship of antigens and antibodies and a better correlation of the laboratory findings with disease as it is observed clinically. Furthermore, any clinical correlations must also take into account the different types of antibodies and particularly whether or not techniques were employed to detect and to titrate all possible varieties of antibodies known to occur. Finally, some further refinement in clinical correlation may be possible through consideration of the antigen mosaic in the corpuscle as related to the number of different kinds (specificities) of antibodies as well as the strength of the antibodies present. Such considerations are possible only through the use of presently available anti-C, D, E, and c sera by which the patient's genotype may be estimated by the laboratory.

REFERENCES

1. Coombs, R. R. A.; Mourant, A. E.; and Race, R. R.: New Test for Detection of Weak and "Incomplete" Rh Agglutinins, Brit. J. Exper. Path. 24:255-266 (Aug.) 1945.
2. Diamond, L. K., and Abelson, N. M: Demonstration of Anti-Rh Agglutinins—Accurate and Rapid Slide Test, J. Lab. & Clin. Med. 30:204-212 (March) 1945.
3. Diamond, L. K., and Denton, R. L.: Rh Agglutination in Various Media with Particular Reference to Value of Albumin, J. Lab. & Clin. Med. 30:821-830 (Oct.) 1945.
4. Fisher, R. A., cited by Race, R. R.: "Incomplete" Antibody in Human Serum, Nature 153:771-772 (June 24) 1944.
5. Fisher, R. A., and Race, R. R.: Rh Gene Frequencies in Britain, Nature 157:48-49 (Jan. 12) 1946.
6. Haberman, S., and Hill, J. M.: Recent Advances in Rh Testing, Texas State J. Med. 42:197-202 (July) 1946.
7. Hill, J. M.: Complexities of Rh Problem: Some Suggestions for Clarification, Am. J. Clin. Path. 17:494-501 (June) 1947.
8. Hill, J. M., and Haberman, S.: Rh Factor: Analysis of a Routine Rh Testing Service, Texas State J. Med. 42:193-197 (July) 1946.
9. Hill, J. M., and Haberman, S.: Demonstration of Rh Antibodies in Newborn and Further Evidence of Pathogenesis of Erythroblastosis, J. Lab. & Clin. Med. 31:1053-1066 (Oct.) 1946.
10. Hill, J. M.; Haberman, S.; and Jones, F. V.: Hemolytic Rh Immune Globulins: Evidence for Possible Third Order of Antibodies Incapable of Agglutination or Blocking, presented at International Rh and Hematology Conference, Dallas, Texas, Nov., 1946.
11. Hill, J. M.; Haberman, S.; and Muirhead, E. E.: CDE(Rh-Hr) Blood Antigens and Antibodies, Scientific Exhibit, A.M.A. Annual Session, Atlantic City, N. J., June, 1947.
12. Landsteiner, K., and Wiener, A. S.: Agglutinable Factor in Human Blood Recognized by Immune Sera for Rhesus Blood, Proc. Soc. Exper. Biol. & Med. 43:223 (Jan.) 1940.
13. Levine, P., and Stetson, R. E.: Unusual Case of Intra-Group Agglutination, J.A.M.A. 113:126-127 (July 8) 1939.
14. Race, R. R.: Rh Factor in Clinic and Laboratory, Special Issue 2, Blood (Dec.) 1947.
15. Wiener, A. S.: New Test (Blocking Test) for Rh Sensitization, Proc. Soc. Exper. Biol. & Med. 56:173-174 (June) 1944.
16. Wiener, A. S.: Conglutination Test for Rh Sensitization, J. Lab. & Clin. Med. 30:667 (Aug.) 1945.

SYMPOSIUM ON THE Rh FACTOR
III. ROUTINE Rh TESTING IN OBSTETRICS

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Since the discovery in 1901, by Landsteiner[4] of the two blood factors A and B, numerous additional blood factors have been discovered. Some of these have proved of considerable clinical importance; others have had little practical application. We are concerned here with the application to obstetrics of the Rh factor discovered by Landsteiner with Wiener,[5] in 1940. A perusal of the hundreds of papers since 1940 concerning the Rh factor leaves the following impressions: (1) the responsibility of keeping pace with all of the literature in obstetrical and laboratory journals is at times an overwhelming task; (2) the disquieting fears built up in the minds of the average patient by sensational articles in the lay press, and hastily drawn conclusions in medical literature, have added a considerable burden to the obstetrician; (3) the improved and rapidly changing laboratory techniques[2, 6] lead the obstetrician to discount to some extent the voluminous reports prior to 1945.

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The mechanism of the Rh factor both in gestation and transfusion is of such common knowledge that only a brief summary is necessary. Roughly, 85 per cent of the white race carry in or on their red blood cells an antigen known as the Rh factor. The remaining 15 per cent do not possess this antigen. When Rh-positive red blood cells are introduced into the tissues or blood stream of an Rh-negative person, the serum of the latter may develop Rh antibodies, which have the power of agglutinating or hemolyzing Rh-positive red blood cells. This antibody producing ability varies considerably among Rh-negative persons. The Rh factor is inherited as is the A,B,O grouping. This is brought about by the two allelic genes, Rh (positive) and rh (negative), with the former being dominant. An Rh-positive phenotype may be either homozygous (Rh Rh) or heterozygous (Rh rh), whereas an Rh-negative phenotype can only be homozygous (rh rh). It is generally thought that in only 5 per cent of the heterozygous unions will the baby be affected.

If only the rare case of full blown erythroblastosis fetalis were involved, the obstetrician might be justified in looking with suspicion upon the entire problem of the Rh factor which has given the laboratory and research departments such a field day. But even Wiener[7] and Levine have had enough humor to pause and deplore the notoriety in the lay press and misconceptions among physicians that have given the obstetrician so much concern. In some states legislators have gone so far as to propose prenatal and premarital Rh testing. It is beginning to appear that the term erythroblastosis should embrace many subgroups of hemolytic disease produced by antigen-antibody reaction in the fetus.

At the time of the cases reported in this paper equipment was not available to differentiate the allelic genes, four of which are single, rh, Rh_0, Rh′, Rh″; three of which are double, Rh_1, Rh_2, and Rh_y; and one of which contains all the antigens, Rh_z. Now that two Hr antisera are available, it will be possible to determine some cases of isoimmunization that were previously overlooked.

The diagnosis of erythroblastosis is not always easy, especially in mild abortive cases, and even autopsy findings may not be unequivocal in premature infants and stillbirths. The innumerable reports of so-called "subclinical" erythroblastosis cases should certainly have complete study of the Rh factor, Hr, and A,B,O antigens on both parents and child, plus corresponding antibodies in the mother.

This paper summarizes a series of 423 consecutive cases in private practice in which the Rh factor was determined on mother, father, and child, with determination of "agglutinating" and "blocking" antibodies in the case of Rh-negative mothers. In addition there is a tabulation of some of my impressions, and a report in greater detail of some specific cases in the series.

Erythroblastosis has been classified by Davidsohn[1] in order of severity: (1) hemolytic anemia, (2) erythroblastemia, (3) icterus gravis, and (4) congenital hydrops. Wiener has advanced an interesting hypothesis of the pathogenesis of the entire group of congenital antigen-antibody diseases which takes into account isoimmunization against not only the Rh factor but also the Hr and A,B antigens.

CASE REPORTS

In 423 consecutive deliveries, 368 women were Rh-positive (87.24 per cent); 55 were Rh-negative (12.76 per cent.) Of the Rh-negative women 46 were married to Rh-positive husbands and from these matings 37 Rh-positive infants, 5 Rh-negative infants, and 3 miscarriages resulted. Nine of the Rh-negative women were married to Rh-negative men, which resulted in 9 Rh-negative infants, with one stillborn.

In table 1 the distribution of cases with regard to parity is tabulated.

TABLE 1.—*Distribution of 423 Consecutive Deliveries with Regard to Parity.*

	Term		Premature		Miscarriages				
Classification	Alive	Still-born	Alive	Still-born	1 mo.	2 mo.	3 mo.	4 mo.	5 mo.
Primigravida									
Rh-positive	198	6		1	1	6	2	2	1
Rh-negative	29	1	1				1		
Multigravida									
Rh-positive	132	3	1	1		9	1	1	2
Rh-negative	20		2			1	1		
TOTAL	379	10	4	2	1	16	5	3	3

As seen in table 2, only 2 cases were of note among the 37 normal infants of Rh-negative mothers. Both of the mothers concerned showed strong titers. The husband in each instance was Rh positive. Reports of these cases follow:

CASE 1.—Mrs. M. J., age 31 years. Her first pregnancy, in 1939, resulted in a normal Rh-positive baby. Her second pregnancy came in 1946. From the thirty-fourth week the patient showed strong Rh-sensitization both for agglutinins and blocking. In spite of a rising titer, it was decided to allow pregnancy to go to term. A normal Rh-positive baby resulted. At no time did the red blood count drop below 5,000,000, and no symptoms of hemolytic anemia developed. In this case there is theoretic danger to the next baby.

CASE 2.—Mrs. M. M., age 26 years. Her first pregnancy, in 1943, resulted in a normal Rh-negative baby; the second, in 1944, in a normal Rh-positive baby. From the thirty-fourth week of her third

pregnancy, in 1946, the patient showed strong Rh-sensitization both for agglutinins and blocking. In spite of a rising titer, it was decided to allow pregnancy to go to term. A normal Rh-positive baby resulted.

In table 2, in the 46 cases of Rh-negative women married to Rh-positive husbands there was one stillborn.

CASE 3.—Mrs. J. L., age 24 years. Her first pregnancy, in 1946, resulted in a stillborn infant at term, with spina bifida.

In table 2, it will be seen that 3 cases in the 46 Rh-negative women with Rh-positive husbands resulted in miscarriages.

CASE 4.—Mrs. I. D., age 29 years. Her first and second pregnancies, in 1940 and 1941, respectively, resulted in miscarriages at two months. The third pregnancy, in 1944, resulted in miscarriage at three months. When she became pregnant the fourth time, in 1946, the patient presented herself as a sterility problem. Rh determination revealed the patient to be Rh-negative and the husband Rh-positive. In spite of Rh-sensitization and the presence of definite iso-immunization she insisted on attempting another pregnancy. She was put to bed and treated as a threatened miscarriage. For four months the pregnancy apparently progressed normally, then slight vaginal bleeding occurred occasionally, and the uterus began to decrease in size. Despite repeated negative Friedman tests and advice to the patient that the fetus was dead, she insisted on carrying the pregnancy for three more months at which time, because of another occurrence of vaginal bleeding, the uterus was emptied. A well preserved 3.5 to 4 months fetus was removed. The placenta was a large mass of icteric appearing tissue which microscopically showed decidual cells, greatly swollen with many pyknotic nuclei. With the presence of Rh antibodies in the mother's blood, and with negative serologic tests, there is a strong presumptive evidence that the Rh factor is involved in the repeated miscarriages in this case.

CASE 5.—Mrs. C. H., age 29 years. Her first pregnancy, in 1940, resulted in a miscarriage at three months. Her second pregnancy, in 1941, resulted in a normal Rh-positive baby. The third pregnancy, in 1945, ended in three months with miscarriage, and the fourth pregnancy, in 1946, ended in the same way. Microscopic examination of the placenta in the last two miscarriages offered no findings to warrant a diagnosis of erythroblastotic involvement. Repeated tests on this patient showed no Rh antibodies.

CASE 6.—Mrs. F. B., age 31 years. Her first pregnancy, in 1944, resulted in a miscarriage at two months. The second pregnancy, in 1946, went to term but resulted in a stillborn infant whose cord blood was Rh-positive. A third pregnancy, in 1947, resulted in miscarriage at two months with no demonstrable cause. The placenta showed no signs of erythroblastosis. At no time were Rh antibodies demonstrable in the mother.

In table 2, it will be noted that in the 46 cases of Rh-negative mothers with Rh-positive husbands, there were 2 premature infants of 7 months each.

CASE 7.—Mrs. McK., age 27 years. Her first pregnancy, in 1939, resulted in a stillborn infant at term. The second pregnancy, in 1940, resulted in a normal Rh-positive baby. A third pregnancy, in 1943, resulted in a 6.5 months stillborn infant. A normal Rh-negative baby was born from the fourth pregnancy, in 1944. Fifth and sixth pregnancies, in 1945, each ended with a miscarriage at two and one-half months. A seventh pregnancy, in 1946, resulted in a 7 months, premature, Rh-negative baby, which was alive. Agglutinins and blocking tests showed a high titer in this case, and there is presumptive evidence that the Rh factor was involved in the loss of four pregnancies in the seven listed.

CASE 8.—Mrs. G. K., age 30 years. Her first pregnancy, in 1944, resulted in a normal, Rh-positive baby. Her second pregnancy, in 1946, resulted in a 7 months, premature, Rh-negative, normal baby.

TABLE 2.—*Results of 55 Pregnancies of Rh-Negative Mothers.*

Rh— Mothers (55 or 12.75%)	Rh+ Fathers (46)	Rh+ Infants (37)	Normal (37) Cases 1-2
		Rh— Infants (5)	Normal (3) Premature (2) Cases 7-8
		Stillborn (1) Case 3	
		Miscarriages (3) Cases 4-6	
	Rh— Fathers (9)	Rh+ Infants (0)	Normal (8) Premature (1) Case 9*
		Rh— Infants (9) Case 9*	
		Miscarriages (0)	

*Twins.

This patient showed strong antibody determination following her first baby. She was an avid reader of lay literature on the Rh factor, and developed a rather severe neurosis involving the Rh factor, which gave considerable concern during her second pregnancy.

In the group of 55 Rh-negative mothers, there were 9 Rh-negative fathers, resulting in 9 Rh-negative infants. Only one was of note.

CASE 9.—Mrs. K. P., age 20 years. With her first pregnancy, in 1946, the patient delivered fraternal twins at eight months. The first was stillborn. The second twin, weighing 5 pounds, 9 ounces, was in poor condition, but with continuous oxygen and blood transfusion improved rapidly.

Among the 368 Rh-positive mothers, 325 had Rh-positive husbands. Table 3 tabulates the outcome of these matings. There resulted 289 Rh-positive infants. Five of these died shortly after birth from various causes, which are summarized as follows:

CASE 10.—Mrs. B. C., age 16 years. On the seventh day after birth her baby developed icterus which cleared immediately on transfusion of 100 cc. of blood. On the thirteenth day icterus again became very marked. Another 100 cc. of blood was of no apparent benefit. The blood picture was essentially normal. On the fifteenth day the baby died. Autopsy was refused.

CASE 11.—Mrs. M. H., age 20 years. Her infant died within twenty-four hours. Autopsy revealed congenital atelectasis.

CASE 12.—Mrs. Z. J., age 25 years. Her Rh-positive baby, died within forty-eight hours, following surgery for atresia of the ileum.

CASE 13.—Mrs. C. P., age 33 years. Her baby, which was Rh-positive, died suddenly when it was 24 hours old. Autopsy showed cerebral hemorrhage.

CASE 14.—Mrs. F. P., age 24 years. Her Rh-positive baby died on the third day. Autopsy revealed bilateral bronchopneumonia.

There were 8 stillborn infants of Rh-positive mothers and Rh-positive fathers.

CASE 15.—Mrs. P. A., age 31 years. At eight months she delivered a premature, stillborn infant. This patient had a history of syphilis with four years of treatment. She received anti-syphilitic treatment during pregnancy and the cord blood was negative.

TABLE 3.—*Results of 368 Pregnancies of Rh-Positive Mothers.*

Rh+ Mothers (368 or 87.24%)	Rh+ Fathers (325)	Rh+ Infants (289)	Normal (284); Died (5) Cases 10-14; Premature (3) Cases 23-25
		Rh— Infants (0)	
		Stillborn (8) Cases 15-22	
		Miscarriages (25)	
	Rh— Fathers (43)	Rh+ Infants (39)	
		Rh— Infants (0)	
		Stillborn (1) Case 26	
		Miscarriages (3)	
		Premature (0)	

CASE 16.—Mrs. R. A., age 27 years. Her term-infant was hydrocephalic with spina bifida.

CASE 17.—Mrs. H. B., age 20 years. In 1946 she gave birth to an eight months stillborn infant. During this pregnancy serologic tests were negative. The patient is now pregnant again and her blood gives a 4 plus Wassermann reaction.

CASE 18.—Mrs. V. D., age 32 years. This was a neglected case of transverse presentation with membranes ruptured for forty-eight hours. The uterus was in a state of tetany, and the baby died during cesarean section.

CASE 19.—Mrs. E. G., age 28 years. At term she delivered a stillborn, hydrocephalic baby.

CASE 20.—Mrs. C. H., age 19 years. Her term baby was stillborn. Autopsy revealed diaphragmatic hernia, with the heart and lungs displaced to the right.

CASE 21.—Mrs. A. H., age 26 years. Her term baby was macerated and stillborn.

CASE 22.—Mrs. A. N., age 30 years. Her term baby was stillborn. Autopsy revealed congenital atelectasis.

Three living premature infants were born to Rh-positive mothers with Rh-positive husbands.

CASE 23.—Mrs. V. C., age 37 years. Her first and second pregnancies resulted in miscarriage at three months. The third pregnancy resulted in a stillborn infant at term. The fourth pregnancy was terminated with a miscarriage at four and one-half months. The fifth pregnancy, in 1945, resulted in a 7 months, Rh-positive baby, which is living.

CASE 24.—Mrs. A. H., age 32 years. Her baby, delivered at seven months, lived two days.

CASE 25.—Mrs. A. O., age 29 years. Her 7 months baby lived twelve hours.

There were 43 Rh-positive women married to Rh-negative men (table 3). Thirty-nine living Rh-positive infants were delivered. Three miscarriages and one stillbirth resulted. The stillbirth occurred in the following case:

CASE 26.—Mrs. M. M., age 28 years. At term, a stillborn hydrocephalic infant was delivered by cesarean section.

DISCUSSION

It will be noted that in a careful study of 423 mothers with regard to the Rh factor, testing was performed on the mother, father, and child chiefly for uniformity and for information in trying to evaluate the routine testing in private practice. Not included are a number of cases accumulated by running Rh-determination in retrospect. The cases presented here are consecutive deliveries.

There were several potentially dangerous cases isolated by Rh testing among the Rh-negative mothers married to Rh-positive husbands. Mrs. M. J. (case 1) has a normal Rh-positive child in the presence of anti-Rh agglutinins, which is direct proof of immunization from her first Rh-positive child. Mrs. M. M. (case 2), in this same group, with demonstrable anti-Rh agglutinins developed during her second pregnancy, had a normal Rh-positive child.

Rh isoimmunization conceivably accounts for the loss of 4 pregnancies by Mrs. I. D. (case 4). It is possible that more sensitive tests on Mrs. C. H. (case 5) and Mrs. F. B. (case 6) would reveal sub-group anti-Rh agglutinins and explain the numerous miscarriages.

In table 2, there were 2 premature babies born to Rh-negative mothers married to Rh-positive husbands. These babies were fortunately both Rh-negative in the presence of Rh-agglutinins in both mothers. I think, however, that isoimmunization accounts for the loss of 4 of the 7 pregnancies by Mrs. McK. (case 7). For Mrs. G. K. (case 8), future pregnancies are potentially dangerous in the event of an Rh-positive fetus.

In the interest of placing the Rh factor in proper perspective I have noted the distribution of the 368 Rh-positive mothers, 325 of whom were married to Rh-positive husbands

and 43 to Rh-negative husbands. All miscarriages, premature births, and stillbirths are tabulated. It will be seen that the fetal loss among Rh-negative mothers from all causes was 10.9 per cent and among the Rh-positive mothers was 12.9 per cent.

My routine is briefly as follows: (1) Rh testing on all pregnant mothers. (2) In case of an Rh-negative mother, Rh testing on the husbands. (3) In case he is Rh-positive, Rh determination of all previous children and of course careful history taking of details related to all past pregnancies. (4) If there is a history of a blood transfusion or a previous Rh-positive child, titer determinations for anti-Rh agglutinins. For this purpose the laboratory has been using anti-Rh agglutinin tests, blocking, and rapid slide tests (Diamond), and lately the Rh-sensitization test (Hill[3]).

I am beginning to feel already the need of Rh, A, B, and Hr typing, antigens for which will probably be available shortly for general use.

My opinion at present is that the Rh factor determination, while not solving very many problems, should be added to the armamentarium and fall into its natural, unsensational place along with routine serologic tests, blood counts, and other necessary laboratory procedures. Up to the present time I have not felt the need of inducing labor prematurely on any Rh-negative mothers.

CONCLUSION

1. A presentation is made of 423 consecutive deliveries in each of which the Rh factor was determined on the mother, father, and infant.

2. The distribution of marriages is tabulated with regard to the Rh factor.

3. All stillbirths, premature births, and miscarriages are tabulated with information concerning pertinent cases.

4. A view as to the proper place of Rh-testing in obstetrics is presented.

REFERENCES

1. Davidsohn, I.: Rh Factor, M. Clin. North America 28: 232-253 (Jan.) 1944.

2. Diamond, L. K., and Abelson, N. M.: Demonstration of Anti-Rh Agglutinins; An Accurate and Rapid Slide Test, J. Lab. & Clin. Med. 30:204-212 (March) 1945.

3. Hill, J. M., and Haberman, S.: Demonstration of Rh Antibodies in Newborn and Further Evidence of Pathogenesis of Erythroblastosis, J. Lab. & Clin. Med. 31:10 (Oct.) 1946.

4. Landsteiner, K.: Uber Agglutinationserscheinungen normalen merschlichen Blutes. Wien. klin. Wchnscher., 14:1132-1134, 1901.

5. Landsteiner, K., and Wiener, A. S.: Agglutinable Factor in Human Blood Recognized by Immune Sera for Rhesus Blood, Proc. Soc. Exper. Biol. & Med. 43:223 (Jan.) 1940.

6. Wiener, A. S.: New Test (Blocking Test) for Rh Sensitization, Proc. Soc. Exper. Biol. & Med. 56:173-176 (June) 1944.

7. Wiener, A. S.: Recent Developments in Knowledge of Rh-Hr Blood Types; Test for Rh Sensitization, Am. J. Clin. Path. 16:477-497 (Aug.) 1946.

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ABSTRACT OF DISCUSSION

Dr. Allen Bloxsom, Houston: Many pieces of the fascinating puzzle of erythroblastosis fetalis have been found and placed in their proper position. I would like to call attention to three of the heretofore missing pieces which I believe can be added now that Miss Rose Matthaei and I* have demonstrated what we believe is an Rh-protective factor in certain Rh-negative blood sera:

1. The clinical fact that erythroblastosis fetalis very frequently begins soon after birth. Inasmuch as this disease also occurs intrauterine, it must be evident that changes per se at birth, with the exception of the removal of the fetus from the varying protective mechanism of the mother's blood, do not start the process.

2. The absence of any transfusion type of reactions in the Rh-negative mother at the birth of the infant, from the Rh-positive cells of that infant gaining access to the maternal blood stream from the placental site. I have failed to find this theoretically possible reaction being observed or reported. Apparently it does not occur. The presence or absence of an Rh-protective factor provides this safety valve. If the mother has a high Rh-protective factor, her infant shows no damage at birth and she is protected by this factor against Rh-positive cells that enter her circulation. If she has no Rh-protective factor, the infant's cells are destroyed to such an extent that she receives little of her infant's Rh-positive cells on the birth of the infant.

3. The finding of Rh agglutinins in normal infants with Rh-positive blood born to mothers with Rh-negative blood, whose serum contained demonstrable anti-Rh agglutinins. One rather enlightening case was reported by me before the Section on Pediatrics at the annual session of the State Medical Association of Texas in 1946. The infant reported was delivered of a mother whose previous child had died of erythroblastosis fetalis shortly after birth. Both the mother and this infant had anti-Rh agglutinins in their blood, but an apparently adequate titer of the Rh-Protective factor, demonstrated in the mother's blood, was carried over by the infant to protect itself. In a publication on "The Rh-Protective Factor" in the *Southern Medical Journal*† there is demonstrated a lack of this factor in the blood of mothers of infants having intrauterine erythroblastosis fetalis. There is demonstrated also an adequate titer of the Rh-protective factor in the blood of mothers with anti-Rh agglutinins giving birth to normal infants. Mention might be made of the work that Mayes has done with cord transfusions of the newborn infant with the mother's blood. He stated that cord transfusions at birth from the mother in 3 cases of erythroblastosis fetalis resulted in recovery, and of 5 infants with erythroblastosis fetalis not receiving cord transfusions at birth, 2 died. Mayes reported, "Use of mother's blood rather than donor's is contrary to the general rule, but so far the mother's blood seems to agree with the babies."

The presence of an Rh-protective factor in Rh-negative blood clearly shows where the above heretofore missing pieces fit in the now clearer and clearer puzzle of erythroblastosis fetalis. The slide shown at this time is of a few of the studies Miss Matthaei and I have made on Rh-negative male donors. (Slide.) The serum of different Rh-negative male donors has marked variation on the inhibition of the Rh antigen-antibody reaction in the test tube.

With the above laboratory and clinical data I have advised the use only of pre-selected Rh-negative male donors of a high titer Rh-protective factor in

*Bloxsom, A., and Matthaei, R.: Anti-Rh Antigen-Antibody Reaction Factor (Preliminary Report), Bull. Johns Hopkins Hosp., in press.

†Bloxsom, A.: Rh-Protective Factor, South. M. J., in press.

the treatment of erythroblastosis fetalis. In addition the transfusions must be massive, that is, from 150 to 250 cc. So far the best results have been in the infants receiving 250 cc. over a period of twelve hours.

To date 13 infants have received transfusions from selected Rh-negative male donors with a high titer of Rh-protective factor. Of this group 9 infants have received transfusions of massive amounts of 250 cc. over a period of from eight to twelve hours. Of this group of 9, 1 infant required a second transfusion and later developed inspissated bile in his ducts with a possible kernicterus. All 9 infants are living and 8 are definitely normal. It is still too early to give an opinion on the infant having the inspissated bile in his ducts.

Four infants received only 150 cc. of blood from selected Rh-negative male donors. Of this group, 1 infant required a second transfusion of 150 cc. Today he has a hydrocephalus which apparently has no relation to his erythroblastosis fetalis. One infant died at a few hours of age when given not quite 150 cc. of a selected Rh-negative blood. It was recognized before birth that this infant would have trouble. The other 2 infants are living and normal.

If treatment by a specific means results in quick recovery from a condition, treatment by the same means to prevent that condition from occurring should be efficacious. Giving the mother selected high titered Rh-protective factor Rh-negative blood transfusions to prevent serious intrauterine damage to the infant by the Rh antigen-antibody reaction has been tried in 2 cases. These cases will be reported in full elsewhere. One infant is alive and well after having been delivered prematurely and given a transfusion of 250 cc. of selected Rh-negative blood; the second infant lived three hours before it died. The mother of the second infant developed influenza three weeks before the infant was delivered and the original plan could not be followed as it was with the first infant. Wiener was the first to report the use of transfusions of Rh-negative blood in the mother in an effort to prevent erythroblastosis fetalis, but unfortunately he did not allow the mother to carry the infant long enough for it to be viable.

The report here of the use of selected potent Rh-protective factor, Rh-negative blood for the mother is believed to be the first successful use of this method of attempting to prevent serious prenatal damage to the fetus. It has resulted in 1 normal infant and 1 death.

I believe that if an infant shows no damage from the Rh-antigen-antibody reaction at birth or shortly afterwards there is no contraindication to his nursing his mother. I realize that Rh antibodies have been demonstrated in breast milk by Witebsky and others, but the concentration in the milk has been for the most part a great deal less than in the blood serum of the mother. Using the mother's blood in cord transfusions, as reported by Mayes, will provide considerable amounts of Rh agglutinins after birth from the mother, and he found no ill effects, providing the infant did not show any damage from erythroblastosis fetalis at birth. Of the 12 infants with erythroblastosis fetalis who lived after treatment and are reported here, practically all had their mother's milk for varying periods after delivery and none showed any ill effects from the nursing. If the infant is normal at birth or is adequately protected after birth with selected Rh-negative blood transfusion, there is no contradication to his nursing his mother. In fact, I think it is advisable.

The value of determining the Rh-protective factor is (1) assurance to the mother that as far as can be told, her infant will not be affected, that is, if she has a sufficiently high Rh-protective factor value; (2) the proper and intelligent selection of donors for transfusions in erythroblastosis fetalis can be made; (3) it is probable that persons showing little or no Rh-protective factor will more easily develop transfusion reactions should they receive Rh-incompatible blood than those with a high Rh-protective factor.

SURGICAL TREATMENT OF CONGENITAL HYPERTROPHIC PYLORIC STENOSIS

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The operative treatment of hypertrophic pyloric stenosis of infants is among the most successful and satisfying of all surgical procedures. The indications are usually definite and clear-cut, the simple Fredet-Ramstedt operation is standardized and generally accepted, the mortality is almost nil, and the results are excellent. However, as long as even occasional deaths occur or relief of symptoms is not always prompt and complete, the subject can be studied profitably, with the view of obtaining results as nearly perfect as possible.

This study is based on a series of 49 patients, all but 2 of whom were operated on in the Bradford Memorial Hospital for Babies. It is not a statistical study, since many larger series have been reported, such as those from the Boston Children's Hospital and the New York Babies Hospital. My figures agree closely with those reports in regard to age and sex incidence, complications, mortality, and results.

The study will not include a review of the literature on the subject, nor will an attempt be made to discuss the still obscure etiology of the condition. This material can be found in the book by Ladd and Gross on *Abdominal Surgery in Childhood and Infancy*, and in a complete article recently published in *Surgery* by Szilagyi and McGraw of Detroit.

In the 49 cases reported here, there were no deaths which could be directly attributed to operation. Two deaths occurred subsequent to discharge of the patients from the hospital apparently well. A third death occurred one month after operation. These will be discussed later in relation to complications. No patients were re-operated upon, and fully half of them vomited not a single time during the hospital stay after operation.

As is pointed out by Szilagyi and McGraw, all recent series show greatly improved mortality statistics, and improvement in results over earlier series. Such improvements are not attributable to the operation itself, since the technique of the operation has remained essentially unchanged. Other factors can be

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pointed out, however, which undoubtedly have contributed to these results. These factors include earlier diagnosis and less prolonged attempts at medical treatment, better preoperative preparation of the patient, increased use of general anesthesia, increased care in performance of the operation, and better postoperative care, especially with regard to the physiologic and metabolic needs of the infant.

DIAGNOSIS

Early diagnosis is now more likely because most newborn babies are under the observation of competent pediatricians or family physicians, and persistent vomiting beginning in the second, third, or fourth weeks of life quickly arouses suspicion. If, in spite of change to a concentrated formula, or thickened feedings, and the use of antispasmodic and sedative drugs, vomiting continues and becomes projectile, visible peristaltic waves appear, and finally a pyloric tumor is palpated, there should be no further delay in resorting to surgery.

It is true that, even in such clear-cut cases, surgery may sometimes be avoided by tenaciously clinging to medical treatment. This course is pursued, however, at the cost of days or weeks of painstaking care and constant supervision, at the constant risk of intercurrent disease induced by low resistance, and certainly greater risk if the operation ultimately becomes a necessity, because the infant will be in far less favorable condition to stand the surgery.

It is also true that many babies who vomit persistently and projectilely and present definite, visible peristalsis may have only a mild degree of hypertrophy of the pyloric musculature and may respond so favorably to medical management as to make surgical treatment unnecessary. The best criterion on which to base the decision to operate or not is the weight. If medical management produces prompt and continued weight gain, even though vomiting is not entirely relieved, it may be continued safely and operation postponed indefinitely.

The differentiation is primarily clinical. If the vomiting can be controlled promptly and sufficiently by conservative means, well and good. If not, surgery should be resorted to without undue delay. The attempt to distinguish between pylorospasm and hypertrophic pyloric stenosis is of little value. Actually, there is probably an element of each condition in most cases. Those cases in which the element of spasm is predominant will more likely respond to medical treatment, while those in which there is pronounced muscular thickening will require surgery. Therapeutic trial alone will give the answer.

In the great majority of cases, diagnosis can be made on the clinical features of the case. Aid from roentgen studies in diagnosis is usually unnecessary, and for the most part has been disappointing when tried. Newer techniques are being developed, however, which may render roentgen studies quite useful in certain atypical cases. Hefke reported a series of 68 patients operated on after a positive roentgen diagnosis of pyloric obstruction was made and a typical tumor was found in each case. He stated that the most important roentgen sign is demonstration of the narrowed prepyloric canal by fluoroscopy and roentgenogram. The pyloric opening time is also of much value, while emptying time of the stomach is of relatively little assistance. The normal pylorus will open and discharge barium into the duodenum practically always during feeding. If the opening is delayed longer than five minutes after feeding is finished, a presumptive diagnosis of pyloric stenosis is made. In most of Hefke's cases of pyloric stenosis, opening time was 15 to 60 minutes.

Early diagnosis and early decision to operate has largely relieved the surgeon of the burden of operating on almost moribund babies, as was often true in former times. Even in the presence of continued vomiting, a fair state of nutrition and hydration can be maintained for considerable periods by use of blood transfusions and parenteral injections of glucose, proteins, and mineral salts. Vitamin therapy has reached an advanced state of efficiency, especially important being vitamin C as an aid in wound healing, and vitamin K for correction of bleeding tendency.

SURGICAL TECHNIQUES

Formerly most operations were done under local anesthesia, often supplemented by a mild state of intoxication with whisky. This was probably advisable when the patients were in such a state of lowered resistance that ether anesthesia might easily lead to pneumonia. Local anesthesia should still be used in the occasional patient who must be subjected to operation during the course of an upper respiratory infection or in the now unusual patient who is badly starved because of too long postponement of surgery. In the patient who is properly prepared for surgery, ether anesthesia is much superior to local anesthesia, and equally safe, when administered carefully by the open drop method. Under light ether anesthesia, the incision can be made and the pylorus delivered without the straining which may result in extrusion

of abdominal viscera so difficult to prevent under local anesthesia. With slight deepening of the anesthetic when the pylorus is ready for return to the abdominal cavity, the peritoneum may be closed much more surely and quickly. Then the anesthetic may be withdrawn, and by the time the remaining layers of the wound are sutured, the patient will be practically awake. Wound healing also is more likely to occur without complication in the absence of local infiltration with novocaine.

The fundamental principle of the standard operation for relief of hypertrophic pyloric stenosis has remained unchanged since it was first used by Fredet in 1907 and simplified by Ramstedt in 1911. Before that time gastroenterostomy was the operation of choice and the mortality was about 50 per cent. In his discussion of the development of the operation in the *Bulletin of the Institute of the History of Medicine*, Mack stated that Fredet first planned the operation as a modification of the Heineke-Mikulicz pyloroplasty, cutting through only the serous and muscular coats of the pylorus longitudinally, then suturing the wound transversely. He found that the sutures tended to cut through, but insisted that the transverse closure of the incision in the pylorus was essential. However, the difficulty apparently frightened him, since for some time he continued to do gastroenterostomies in most of his cases. In 1911, Ramstedt, in performance of the Fredet operation, noticed after section of the muscular coats that the wound edges gaped markedly, and he had the impression that the stenosis was already overcome. He attempted transverse suturing, but the stitches cut through, and he covered the open wound in the pylorus with omentum. He was so impressed by the rapid recovery of the patient that in his next case he made no attempt to close the wound in the pylorus. In this case, too, the operation was successful, and in his first report, published in 1912, he stated that sutures in the pyloric musculature were not only unnecessary but actually harmful, since they might contribute to further obstruction from infolding of the redundant mucosa. Fredet soon realized the value of Ramstedt's modification of his operation, and kept the subject alive by publishing twelve articles on the operation in the twenty years from 1907 to 1927.

The operation as done today is essentially unchanged. General improvement in surgical technique, especially as applied to pediatric surgery, has served distinctly to improve results and lower mortality. The reactions to surgical procedures are characterized by a much narrower margin of safety than is shown by the adult. Tissues of the infant are more delicate and must be handled with extreme gentleness and care to promote healing and avoid shock. Small instruments and fine suture material are essential. The infant does not tolerate blood loss well, and strict hemostasis should be sought. The infant's heat regulating mechanism compensates poorly for sudden changes in the temperature of his environment. Clothing and other covering should not be suddenly pulled off, leaving the body and the extremities entirely exposed while the skin of the abdomen is being prepared or while the dressing is being put on after the operation. Extremities are best wrapped with flannel strips or cotton sheet wadding, but at least they should be kept covered. The opposite extreme of too much heat should likewise be avoided, since excessive perspiration may result in dangerous dehydration.

The right upper rectus muscle splitting incision is most widely used. The subcostal and the transverse incisions have their advocates, but they do not seem to me to furnish adequate exposure. The center of the rectus incision is located over the border of the liver so that this organ will partly plug the wound. Some operators allow the stomach to remain distended with air as an additional aid in plugging the wound against extrusion of intestines and omentum. I prefer to empty the stomach of air by means of a small catheter passed through the mouth by the anesthetist, as this allows the pyloric tumor to be more easily delivered and held. Delivery of the pylorus without trauma is an important step in the operation. This is most easily accomplished by grasping the anterior wall of the stomach gently with a pair of ophthalmologist's lid forceps, the round, fenestrated ends of which are protected by fine rubber tubing. As the anterior wall is withdrawn through the wound, the pylorus follows, is grasped between the operator's thumb and index finger, and the stomach replaced. I have found that most pyloric tumors are distinctly curved instead of olive shaped or ovoid, as usually described. The lesser curvature border may be actually concave, while the greater curvature border is convex and longer. The incision in the pylorus is often slightly curved, therefore, and its location must be carefully chosen to avoid as many blood vessels as possible. There is always a relatively avascular strip along the antero-superior surface, which is incised through the serosa and outer muscle coat. The incision is deepened to the submucosa by spreading the edges with some type of blunt dissector until the submucosa bulges out to the level of the serosa. For this procedure

curved mosquito forceps, held tangentially in the incision so that the tips are always in sight, are satisfactory.

Too much emphasis cannot be laid on the importance of exercising great care in spreading the wound at the lower end so that perforation of the thin duodenal wall may be avoided. This is one of the two most serious complications of the operation and may go unnoticed to result in fatal peritonitis. If the accident is recognized, the opening may be readily closed and no harm will result. A telltale bubble of air and a little bile-stained fluid in the lower angle of the wound may be the only warnings of threatened disaster. I have perforated the duodenum once, but the opening was, fortunately, recognized and closed with a mattress suture of fine cotton.

The other potentially serious complication is hemorrhage from the vessels in the margin of the pyloric wound. Ordinarily, bleeding is slight if the site of the incision is properly chosen, and it can be readily controlled by pressure with warm, moist gauze. Persistent bleeding points may be successfully pinched with mosquito forceps or secured with mattress sutures of fine silk or cotton.

Closure of the incision in the abdominal wall is greatly facilitated by slightly deepening the anesthetic while the edges of the peritoneum are approximated from below upward. A continuous suture of No. 000 chromic catgut for closing the peritoneum and posterior rectus sheath is preferable. Except for this suture, fine cotton is used throughout. A continuous suture for the peritoneum is required to eliminate gaps through which omentum might be extruded, and catgut is used for this layer since long strands of nonabsorbable suture material in a wound are to be avoided. The anterior rectus sheath is closed with interrupted No. 50 cotton sutures, and the skin with interrupted No. 100 cotton sutures. If ligatures are necessary for control of bleeding points, No. 100 cotton is used. Since there is usually a very thin layer of subcutaneous fat in infants, healing of skin edges may be disturbed by foreign body reaction to knots of suture material even as small as No. 100 cotton. Particularly is catgut to be avoided here. It has proved expedient to clamp bleeding points in the subcutaneous fascia with small mosquito forceps and leave these forceps in place during the remainder of the operation. When they are removed after closure of the rectus sheath, renewal of bleeding will seldom be encountered. Using this technique in wound closure, no wound disruption and only 2 instances of mild stitch infection in the skin have occurred in the cases reported here.

Exposure and sudden lowering of temperature are to be avoided during the application of the dressing and return of the patient to bed. Parenteral feeding and fluid administration are resumed as before the operation, and it is my custom to give nothing by mouth for twelve to eighteen hours after the operation. After the trauma necessary in delivering and holding the pylorus out of the wound, there is a certain period during which peristaltic activity of the stomach and bowel is inhibited, and it is not logical to crowd fluids into the disturbed intestinal tract during this period. After a preliminary rest, the stomach tolerates fluids more easily and carefully controlled feeding may be commenced. A feeding routine is outlined in table 1.

TABLE 1.—*Postoperative Management in Pyloric Stenosis**

A. Feeding	
1.	At 12 hours (consult operating surgeon) begin with a pre-digested sterile feeding which controls duodenal hydrogen ion concentration at approximately normal: Amigen solution 10% / Dextrose solution 10% / Buffer water 10% — or — Plain 10% buffer water may be preferred; either is preferred to plain water. 15 ml. (5 oz.) every 4 hours is ordered for first 24 hours.
2.	At 24 hours increase the amount to 50 ml. (1 oz.) and at this time or in another 12 hours order the sterile feeding alternated with a dilute acid milk of the following composition. Evaporated milk, 1 volume (30 ml. or 1 oz.) 10% buffer water, 2 volumes (60 ml. or 2 oz.) Carbohydrate to 5% (Karo, Dextri-Maltose, Dexin, or Dextrose.)
3.	At 48 to 60 hours, increase the amount to 45 ml. (1.5 oz.) per feeding of the dilute acid milk mixture.
4.	After 72 hours, 60 to 90 ml. (2-3 oz.) of any preferred formula may be given. Lactic acid formulae are thought advantageous.
B. Fluid balance	
1.	Continue clyses of Ringer's or lactate-Ringer's solution to needs of patient (estimated amounts of 100-150 ml. per Kg. per 24 hours, dependent on amount given intravenously.)
C. Parenteral feeding	
1.	Minimize starvation with 10% Dextrose intravenously at least once daily (20 ml. per Kg. at injection); plasma or whole blood as warranted by condition of patient.

*I am indebted to Dr. Frances Love, recently chief resident at the Texas Children's Center, Dallas, and formerly resident on the Pediatric Service of Dr. Hartmann in Saint Louis, for the feeding routine.

DEATHS FOLLOWING OPERATION

Among the 49 cases in this series no deaths occurred within one month after operation. Three babies are known to have died subsequent to a period of complete relief of symptoms and apparent recovery from the operation. It is not considered likely that these deaths were attributable to the operations, but the circumstances are presented here to stimulate speculation as to any possible connection.

One baby was ready to leave the hospital ten days after operation, gaining weight and without vomiting. Intractable diarrhea developed, the etiology of which could not be determined. This child died one month after the operation.

A second baby was discharged as cured

and did well for three months. He vomited a feeding occasionally, but at the age of 5 months weighed 13 pounds. Three days before the second admission he developed a cold, with a temperature of 101 F., and vomiting became persistent. Vomiting became blood streaked on the day following admission, and on the second day he vomited increasing quantities of bright blood. Blood transfusions were given, but he died on the following day after a vomiting spell during which he apparently aspirated some of the vomitus.

Autopsy showed a penetrating ulcer on the posterior wall of the duodenum 1 cm. from the pyloric ring. The pyloric incision was healed and the pyloric canal essentiallly normal in size. At operation the duodenum had appeared normal, the pylorus was easily delivered and incised. The technique varied from the usual only in that a small vessel in the margin of the pyloric incision was ligated. This was in the anterior wall of the pylorus, however, while the ulcer was in the posterior wall of the duodenum. What connection there might be between the trauma to the duodenum incident to the delivery and holding of the pyloric tumor and the occurence of the ulcer is difficult to imagine.

A third patient was a Negro child who had been operated on at the age of 4 weeks, after having been treated and studied in the hospital for two weeks. A rather unsatisfactory degree of thickening of the pyloric musculature was found, and a brief examination of the duodenum was made to rule out obstruction by congenital bands. The pyloric muscle was incised and separated as usual, and there was prompt recovery from the operation. He vomited on an average of once a day for two weeks longer, but was discharged while gaining weight. He soon stopped vomiting and developed normally, weighing 16.5 pounds at 7 months. Then he became suddenly and violently ill, vomited projectilely, and the abdomen became distended. He was brought into the hospital two days after onset of this illness, in a moribund condition, and died before operation could be undertaken.

Autopsy showed a complete obstruction of the terminal ileum by a dense fibrous band, with one end attached to the wall of the ileum and the other to the jejunum, 10 cm. distal to the duodenojejunal junction. There were other filmy bands of adhesions between loops of the small bowel and about the liver. None of these was noticed at the time of operation, although they could have been present. It is difficult to understand how these adhesions could have resulted from the exploration made in the right upper quadrant at the time of the operation, five months earlier. They may have represented an intra-uterine peritonitis.

It seems unlikely that these last two deaths occurred as a result of the operative procedures. The possibility of a connection presents itself, however, and serves to emphasize the necessity for extreme care and gentleness in handling the delicate tissues involved.

REFERENCES

1. Donovan, E. J.: Congenital Hypertrophic Pyloric Stenosis, Am. J. Surg. 39:377 (Feb.) 1938.
2. Hefke, H. W.: Roentgen Diagnosis of Hypertrophic Pyloric Stenosis in Infants, Radiology 43:267 (Sept.) 1944.
3. Ladd, W. E., and Gross, R. E.: Abdominal Surgery of Infancy and Childhood, Philadelphia, W. B. Saunders Co., 1941.
4. Mack, H. C.: History of Hypertrophic Pyloric Stenosis and Its Treatment, Bull. Inst. Hist. Med. 43:666 (Dec.) 1942.
5. Szilagyi, D. E., and McGraw, A. B.: Problems of Infantile Pyloric Stenosis with Particular Reference to Surgical Treatment, Surgery 13:754 (May) 1943.
6. Vance, C. E.: Congenital Pyloric Stenosis, Ann. Surg. 119: 351 (March) 1944.

Box 28.

ABSTRACT OF DISCUSSION

Dr. Joe White, Fort Worth: Dr. Duckett has given a complete and accurate discussion of the problem of pyloric stenosis. His record of 49 cases without a surgical death is evidence of his careful and competent handling of children with this condition.

I have operated in 40 such cases. The first 10 cases were a good many years ago and largely in a charity children's hospital. The children were badly emaciated when brought in, and 3 died. I have had no deaths in the last 30 consecutive cases. I think this happy result is because I have done most of the operations for four pediatricians, and the cases have been referred promptly as soon as the diagnosis has been positively made. If such mortality figures are to be achieved, the babies must be operated upon before they have had too great a weight loss. That we have learned to defer operation until fluids and electrolytes have been restored has also been a very great factor. Another thing on which I emphatically agree with Dr. Duckett is the use of ether anesthesia. I have operated on a number of babies with local anesthesia and have had a few unhappy experiences with partial evisceration. One of the deaths in the first 10 cases I mentioned was from a suppurative wound infection followed by peritonitis, with the pyloric incision intact at autopsy. I am sure that in the bad risk children the infiltration of novocaine causes poor wound healing. There are possibilities of disaster from opening a duodenum. I have never done it but feel sure I will some day.

When it is properly done I know of no operation which offers so great a reward for so small a surgical effort as the operation for hypertrophic pyloric stenosis. That the pediatricians are convinced this is so is clearly shown by the promptness with which they have such babies operated upon. I have been down the same road Dr. Duckett has, and I can assure you that he has told the story of surgical experience with this disease sensibly and accurately. I congratulate him on his excellent record, and I am sure he will continue to improve it.

Rehabilitation in tuberculosis should begin no later than the day the patient enters the sanatorium, because from the beginning he must know that there is still a future for him. This knowledge acquired early in illness makes a great difference in his morale and his manner of adjustment to a changed way of life.—Herman E. Hilleboe, M. D., and Norvin C. Kiefer, M. D., Pub. Health Rep., Mar. 1, 1946.

THERAPY OF ESSENTIAL HYPERTENSION

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Essential hypertension and the frequently associated coronary sclerosis have only recently outdistanced rheumatic fever as the principal causes of heart disease. Despite the finding of a few clinical cases that correspond to the "Goldblatt kidney" experimental animals, and their "cure" by nephrectomy, the etiology of the great majority of cases of essential hypertension is still obscure, and the results of their therapy correspondingly much disputed.

The experimental work of two groups of investigators at the University of Texas Medical School points away from the humoral (renin-angiotonin) mechanism of hypertension, and reasserts its neurogenic basis. In clinical hypertensive cases Dr. Gregory and his co-workers have refuted the mediation of angiotonin, and emphasized its nervous control by the effects of spinal anesthesia.[5] The experimental renal hypertension of the rat has yielded in its chronic phase to sympathicolytic (yohimbine) and sedative (nembutal) drugs in the hands of Dr. Ogden and his group.[7] If the generalized arteriolar constriction found in hypertension were due primarily to nervous influences, the use of nervous sedatives and thoracolumbar sympathectomy would find a rational basis. Psychic influences, operating through the nervous system, would also be important in both the production and the therapy of the hypertensive state.

In our Hypertensive Clinic it has been the impression, without statistical proof, that sudden cold weather has been accompanied, as a presumable sympathetic effect, by higher blood pressures. It has also been the general experience that many patients present enormous variations in blood pressure from normal (for example, 120/80) to high hypertensive (for example, 200/120) levels for years, and even decades. Some hypertensive cases, particularly in the above mentioned category, present a surprising lack of involvement of the heart, kidney, brain, or retinal vessels over the same period of time, or very unequal involvement.

In the recent Texas City disaster, several of the attending physicians, including myself,[10] observed transient hypertension, up to about 220 mm. systolic and 145 mm. diastolic pressure, in the wounded victims of the explosions. The elevation of the blood pressure lasted for several hours or days in the severely shaken patients. In some patients it was present within hours of the blasts; in others during the stages of recovery from shock. Under such circumstances the blood pressure rose from unobtainable to high levels before subsiding to normal. While latent or previous hypertension, and the influence of rapid increases in blood volume as a result of intravenous administration of, frequently, 1,500 and more cc. of plasma and blood could not be excluded in some cases, the occurrence of this phenomenon in very young persons exhibiting other evidences of hypothalamic and reflex nervous irritability (for example, emotional storms, paroxysmal tachycardia) was very striking.

In World War II, the Russians noted similar transient hypertension in front-line casualties and correlated it with the degree of nervous system stimulation.[8] Whether the observed hypertension is truly neurogenic in mechanism, or the result of hypersecretion of the adrenal glands, as is the case of epinephrine in the immediate "alarm reaction" of Cannon, or, possibly, of the corticotropic and adrenal cortical hormones in the resistance phase (for example, in our cases recovering from shock) of the adaptation syndrome to various noxious stimuli of Selye[10] is difficult to decide. Nor is the question answered by the recent experimental induction of transient hypertension in response to continuous renal nerve stimulation in dogs[6] and air blasts in rats.[4]

The exacerbations and remissions of the clinical hypertensive state make it difficult to judge the effects of therapy. Evaluation of symptomatic relief is likewise perverted by the notorious psychoneurotic—cerebral, cardiovascular, and gastro-intestinal—components of the patients' complaints. Thus, Ayman,[1] who has emphasized these characteristics of essential hypertension, noted relief of symptoms in 82 per cent of his cases following the administration of dilute hydrochloric acid in placebo dosage. Two Russian investigators likewise reported favorable hypotensive and symptomatic effects in one-half of the cases of essential hypertension treated by repeated (6 to 8 or more) parenteral injections of distilled water.[8] Even psychoanalytic therapy has been supposedly successful in eliminating the hypertensive state in isolated instances.

Potassium thiocyanate is considered by many investigators and practitioners to be the drug of choice in the treatment of essential hypertension. Its mode of pharmacological action has never been satisfactorily

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elucidated, yet it is claimed to have favorable hypotensive and symptomatic effects in at least one-half the cases at subtoxic or "therapeutic" blood levels.[2] Various drugs have been compared in efficacy in different small groups of patients (by Kapernick, 1943; Evans and Loughnan, 1939) with disparaging results. Potassium thiocyanate and other drugs have not hitherto been rigorously tested in the same patients.

Since 1942, Dr. McKinley and I have studied 68 ambulatory patients with uncomplicated essential hypertension,[9] who were given in various rotation six commonly used drugs—phenobarbital, mannitol hexanitrate, glucophylline (xanthine derivative), niacin (nicotinic acid), potassium thiocyanate, and placebo (lactose or sodium bicarbonate). The period of therapy for each drug was at least a month (for potassium thiocyanate, three months), and each patient's blood pressure and symptoms were recorded twice weekly.

It cannot be emphasized too strongly that the commonly used method of judging the hypotensive effect of a drug by noting the drop, or maximum drop, in blood pressure as compared with the average of several control readings at the start of therapy is subject to the errors of the known variability of arterial tension. Two methods of evaluation that we used checked closely and disagreed markedly with the results of the above crude "before and after" method used in previous reports. One method was to compare the medians of blood pressure readings during long control and therapeutic periods (median to median method). The other was to contrast the actual range of systolic and diastolic readings in all the drugless intervals with those obtained during the administration of a drug (range to range method).

Symptoms were relieved in the great majority of cases following the exhibition of all the drugs except potassium thiocyanate, which was associated in most instances, even at low "therapeutic" blood serum levels (5 to 15 mg. per 100 cc.), with continuation of the existing, or the addition of new, symptoms. The higher "toxic" blood levels (for example, 15 to 25 mg. per 100 cc.), attained inadvertently at times, were usually associated with more marked toxic symptoms. Two psychoses and one death from uremia could be imputed, at least partly, to the drug; the blood pressure fell markedly in these cases. Other possible toxic effects of potassium thiocyanate included, in the order of decreasing incidence, dizziness, weakness, headache, nausea, malaise, nervousness, dyspnea, palpitation, precordial pain, epigastric distress, sleepiness, insomnia, syncope, blurred vision, tinnitus, anorexia, vomiting, itching, urticaria and other rashes, edema of the face, and thyroid enlargement.

We were able to disprove the contention of one group of investigators[3] that blood pressure varies inversely with the resting potassium thiocyanate blood level, thus providing a rationale for its therapeutic use. A distinct fall in diastolic blood pressure occurred usually only at toxic potassium thiocyanate levels. On the other hand, some patients on potassium thiocyanate therapy presented actual increases in systolic and diastolic pressures, as did many patients treated with the other drugs. Statistically we were able to prove that the generally hypotensive effects of potassium thiocyanate were significantly greater, as compared with placebo, than those of the other drugs. We cannot rule out potassium thiocyanate toxicity as a cause of this hypotensive effect. The drops in systolic and diastolic blood pressures following any of the six drugs, as compared with the control period, were seldom important clinically.

Is drug therapy justifiable? For symptomatic relief, mild sedation or psychotherapy is in order. On occasion, as during hypertensive encephalopathy crisis, it is reasonable to employ all measures, such as bed rest, large doses of sedatives, and venesection, to reduce the blood pressure and prevent serious or fatal cerebral hemorrhage. Therapeutically induced relative hypotension may, however, be dangerous in itself. Particularly in elderly persons, drops in blood pressure from accustomed levels, even to levels above normal, may, theoretically at least, lead to cerebral, cardiac, hepatic, and renal ischemia, with possible cerebrovascular accidents, myocardial infarcts, and serious diminution of liver and kidney function resulting therefrom. In sympathectomized patients at John Sealy Hospital we have recently encountered at least 2 cases of acute myocardial infarction in rather young persons, following closely enough upon the Smithwick procedure and the resulting hypotension, especially in the vertical position, to be attributed to the changed coronary hemodynamics.

SUMMARY AND CONCLUSIONS

The above data and discussion emphasize, above all, that ignorance of the etiology and mechanism of essential hypertension is chiefly responsible for the therapeutic morass in which we find it.

An example of possible neurogenic or hormonal "alarm" or "adaptation" reactions is presented in instances of transient hypertension in victims of the Texas City disaster.

While neurogenic stimuli may play a role in the initiation or perpetuation of certain hypertensive states, attempts to depress those by sedatives, other drugs, or even sympathectomy have been discouraging in our experience.

Potassium thiocyanate, with unproved nervous and cardiovascular depressant effects, may reduce systolic and diastolic blood pressures in a statistically significant, but clinically insignificant, degree, frequently with manifold toxic manifestations.

Drug therapy of various categories, properly evaluated, may be of symptomatic value, but its hypotensive effect is usually slight and uncertain, and occasionally dangerous.

REFERENCES

1. Ayman, D.: Evaluation of Therapeutic Results in Essential Hypertension. I. Interpretation of Symptomatic Relief, J.A.M.A. 95:246-249 (July 26) 1930.
2. Barker, M. H.; Lindberg, H. A.; and Wald, M. H.: Further Experiences with Thiocyanates. Clinical and Experimental Observations, J.A.M.A 117:1591-1594 (Nov. 8) 1941.
3. Caviness, V. S.; Umphlet, T. L.; and Royster, C. L.: Blood Pressure and Sulfocyanate (Thiocyanate), Am. J. M. Sc. 204:688-697. (Nov.) 1942.
4. Farris, E. J.; Yeakel, E. H.; and Medoff, H. S.; Development of Hypertension in Emotional Gray Norway Rats after Air Blasting, Am. J. Physiol. 144:331-333 (Aug.) 1945.
5. Gregory. R. L., and Levin, W. C.: Studies on Hypertension, V. Effect of High Spinal Anesthesia on Blood Pressure of Patients with Hypertension and Far-Advanced Renal Disease—Its Possible Relationship to Pathogenesis of Hypertension, J. Lab. & Clin. Med. 30:1037-1043 (Dec.) 1945.
6. Kottke, F. J.; Kubicek, W. G.; and Visscher, M. G.: Production of Arterial Hypertension by Chronic Renal Artery—Nerve Stimulation, Am. J. Physiol. 145:38-47 (Nov.) 1945.
7. Ogden, E.; Collings, W. D.; Taylor, A. N.; and Tripp, E.: Production of Neuro-Hypertension by Kidney, Texas Rep. Biol. & Med. 4:14-26 (Spring) 1946.
8. Ruskin, A.: Review of Soviet Cardiology, Am. Rev. Sov. Med. 3:260-275 (Feb.) 1946.
9. Ruskin, A., and McKinley, W. F.: Comparative Study of Potassium Thiocyanate and Other Drugs in Treatment of Essential Hypertension, Am. Heart J., in press.
10. Ruskin, A.; Beard, O. W.; and Schaffer, R. L.: Elevated Blood Pressures in Victims of Texas City Disaster: Blast Hypertenson, Am. J. Med., in press.
11. Selye, H.: General Adaptation Syndrome and Diseases of Adaptation, J. Clin. Endocrinol. 6:117-201 (Feb.) 1946.

ABSTRACT OF DISCUSSION

Dr. Arthur Grollman, Dallas: The recent studies in experimental hypertension have greatly modified our views concerning the probable pathogenesis of essential hypertension as it occurs in the human being. The naive view that, since hypertension could be induced in the animal by the application of a Goldblatt clamp to the renal artery, a similar occlusion of the renal artery was necessary to produce this condition in the human, is no longer tenable. Only rarely does such obstruction of the blood flow apparently induce hypertension. However, experimental data indicates that the kidney is responsible for hypertension and that this hypertension results from humoral rather than from a neurogenic mechanism. The fact that hypertensive animals react to certain sympatholytic drugs by a drop in blood pressure does not indicate necessarily that their hypertension is due to sympathetic stimulation.

Another explanation of the acute rise in blood pressure observed in shock, and which Dr. Ruskin attributes to a possible nervous origin, is that the increased blood pressure may be due to an acute ischemia of the kidney which gives rise to the liberation of a pressor agent by this organ. It is known, for example, that such pressor agents (renin, hypertensin) are liberated by the kidney following renal occlusion, in the acute stage of glomerular nephritis, after hemorrhage, and in eclampsia. It is therefore likely that the liberation of this pressor agent in shock is responsible for the temporary rise in blood pressure which Dr. Ruskin observed in the victims of the Texas City disaster. In fact, the presence of this pressor agent has actually been demonstrated by several groups of workers who have withdrawn blood from the renal veins of patients in shock.

Dr. Ruskin's experiments with potassium thiocyanate and other sedative drugs are in accordance with my own experience. I have long ago given up their use. Of much greater value in the management of the hypertensive patient is the drastic sodium restriction regimen which I described several years ago. This has proved to be far superior to the use of drugs in alleviating the symptoms and in some cases will actually produce very striking reductions in blood pressures which do not seem to be accompanied by the deleterious effects which, as Dr. Ruskin has pointed out, often follow sympathectomy. I am glad that Dr. Ruskin has emphasized these undesirable after-effects of sympathectomy, which are not of general knowledge to the profession. He is to be commended for his critical evaluation of drug therapy in hypertension.

Dr. Raymond Gregory, Galveston: Dr. Ruskin's carefully controlled clinical observations admirably emphasize the inadequacy of drug therapy in hypertension. His method not only of making observations during a control drugless period, but also of comparing the ranges of blood pressure variations during the control period with those observed during the experimental period, is to be commended. This procedure is essential, however, because extreme variability of blood pressure is often characteristic of this disease.

I am glad that Dr. Ruskin has pointed out the great frequency of toxic reactions that result from thiocyanate therapy. Almost uniformly experienced toxicity and the additional severe cerebral states, such as confusion, delirium, and even convulsions, have caused me to discontinue the use of thiocyanates. In this connection, it should be emphasized that the cerebral toxic effects of thiocyanates are sometimes confused with the cerebral manifestations of hypertension itself. This confusion may lead to increased dosages of the drug with serious degrees of toxic effects. It has been repeatedly emphasized that thiocyanates should be administered only with control of the dosage by repeated determinations of blood levels of the drug. The lack of facilities for so controlling the dosage of the drug should be a contradiction to its use.

In spite of the inadequacies of drug therapy of hypertension, much needs to be done and can be accomplished with hypertensive patients. Many such patients are ill not from their elevated blood pressure, but from the anxiety state which has been induced by their fears or the fears of someone else regarding the effects of the disease. It is essential that physicians have sufficient understanding of the disease to avoid initiating or adding to the anxiety states.

RESIDENCY IN PSYCHIATRY APPROVED

The Veterans Administration Hospital at North Little Rock, Ark., has been approved by the American Medical Association and American Board of Psychiatry and Neurology for a residency training program in psychiatry, Dr. Harold W. Sterling, manager, announces. Fifteen residents will be accepted each July 1 and January 1 for a three-year training period, during which the annual stipend will be $3,300 for physicians who served as medical officers during World War II and $900 to $1,800, plus subsistence, for others. The training program will be conducted in close liaison with the University of Arkansas School of Medicine.

THE USE OF HYDANTOIN (MESANTOIN) AS AN ANTI-CONVULSIVE DRUG

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Methyl-phenyl-ethyl hydantoin, a new anticonvulsive drug, is now commercially available under the trade name of "Mesantoin." It was formerly referred to as "Phenantoin" or "Hydantoin."

Since the advent of phenobarbital, dilantin, and tridione, there have been fairly adequate medicines for control of grand mal and petit mal seizures, but, unfortunately, psychomotor attacks have responded poorly to these medications. An occasional patient with grand mal seizures has not been able to take enough phenobarbital or dilantin, because of undesirable side effects, to control his spells completely. Our experience, as well as the experience of other observers, indicates that mesantoin is of great benefit in the treatment of psychomotor epilepsy and in cases of grand mal where the illness has not been completely controlled by maximum tolerated doses of dilantin or phenobarbital, or where, because of intolerance, the patients have not been able to take enough of the drugs to eliminate their attacks.

Loscalzo, following favorable reports on the synergistic action of phenobarbital and dilantin, and the report of Tainter and others that 3-methyl 5,5 phenyl-ethyl hydantoin had approximately the same anticonvulsive action in experimental animals as dilantin, reported about 60 per cent reduction of grand mal seizure in 17 patients through the use of hydantal, a combination of mesantoin and phenobarbital. Of these 17 patients, 6 developed some drowsiness. He further stated that there was an improvement in the emotional status of these patients.

Clein, also using hydantal, reported favorable results in 6 cases of grand mal epilepsy and encouraging results in 5 cases of petit mal seizures.

In a group of 104 epileptic patients, Kozol found mesantoin to be valuable in the grand mal and psychomotor types but not with the petit mal group. He noted a rash in 10 per cent of his patients, and a tendency to drowsiness, which could be obviated to a large extent by a very gradual increase in the dosage of the drug. He recommended a beginning dose of 0.05 Gm. daily to be increased at weekly intervals. His average adult maintenance dose was 0.6 Gm. daily and the average dose for children was 0.5 Gm. daily; however, some adults required and tolerated doses of 1.4 Gm. daily. He also emphasized the low toxicity of the drug, mentioning the complete lack of serious side effects and the case of 1 patient who took 7.2 Gm. of mesantoin with suicidal intent only to experience a day of coma.

Lennox, reporting on the use of mesantoin in 35 patients, stated that it was of no value in petit mal but that in one-third of the patients with major seizures it was of distinct benefit. His classification of types of seizures includes Jacksonian epilepsy, wherein there is a localized sensation or motion with spreading but not loss of consciousness; focal convulsions, which implies a constant localized point of origin which initiates a generalized convulsion with loss of consciousness; the ordinary grand mal attack with generalized tonic-clonic movements and a profound loss of consciousness; the psychomotor attack, which will be discussed in detail later; and the group of petit mal (pyknoepilepsy) epilepsies, characterized by a transient lapse of consciousness with minimal rhythmic jerking, myoclonic jerks of lightning-like character with no perceptible change in awareness, and the akinetic episodes which are sudden losses of posture with nodding or falling without loss of consciousness. The drugs of choice in the treatment of Jacksonian, focal, and grand mal epilespy are dilantin, mesantoin, and phenobarbital in that order, whereas psychomotor seizures seem to respond best to mesantoin, dilantin, and phenobarbital in the order mentioned. The petit mal group had not responded satisfactorily to any drugs until glutamic acid and tridione were introduced.

In the preliminary study reported here, a period of ten months is covered and only patients having psychomotor seizures are included. Of this group of 20 patients, the majority had been given extensive trials on dilantin, phenobarbital, tridione, and various combinations of these drugs without satisfactory control of their seizures.

Psychomotor attacks. variously referred to as epileptic equivalent states, psychic seizures, psychomotor seizures, or psychic equivalents, are many times difficult to recognize and are often misinterpreted as behavior disorders. Although the patient having such an attack usually has an amnesia for the period, he may act as though he were conscious. The attacks ordinarily last only a few minutes but may go on for several hours or even days. During an attack, the patient

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usually mumbles incoherently, performs some purposeless movement such as buttoning and unbuttoning his garments, and frequently is incontinent. He is likely to be irritable, especially if he is crossed or an attempt is made to restrain him. He may wander about as if intoxicated, or may be wantonly destructive. Convulsive movements may accompany an attack, but they are of the tonic rather than the clonic variety. The patient may have stiffening of the arms or legs, or mere setting of the teeth. Occasionally, rapid breathing or a change in color is noted. The degree of unconsciousness varies from patient to patient. It may resemble the twilight period between sleep and awakening or there may be a complete amnesia for the attack. Some patients maintain that they are completely aware of their actions and their environments but are unable to explain or control their behavior. It is important to suspect psychomotor epilepsy when a patient presents episodes of unusual behavior that are not in keeping with his ordinary personality. If the patient is having grand mal or petit mal attacks also, the diagnosis of psychomotor seizures is even more likely. The electroencephalogram is a valuable adjunct in clearing up the diagnosis in many of these problems.

Histories of certain cases may illustrate what is meant by psychomotor seizures:

CASE REPORTS

CASE 1.—A boy 16 years old (L. B.) has had seizures for four years. He says that before an attack he feels restless for several minutes, then "goes blank." His mother says that he appears distraught and usually runs out of the house, occasionally upsetting articles of furniture. He wanders about and on several occasions has been picked up by the police because he obviously was not in possession of his faculties. These episodes occurred at first only once or twice a month and were interpreted as temper tantrums. During the past three years, they gradually increased in frequency until he was having from three to four each week. It was necessary for him to leave school because his behavior was so upsetting to the other students. The patient was given dilantin and developed marked ataxia on 0.4 Gm. This dose was reduced to 0.3 Gm. and 0.2 Gm. of phenobarbital was added. The frequency of his spells was reduced to one a week. The addition of 0.9 Gm. of tridione produced no change in his condition except a marked "glare reaction," so it was discontinued. Mesantoin was then added to his program. At the present time he is taking 0.4 Gm. daily and has been free of seizures for the past ten weeks. This is the first time in fourteen months that he has gone more than a week without a seizure.

CASE 2.—A 30 year old draughtsman began having mild "black-outs" during adolescence. During his early twenties he had several grand mal seizures and six years ago began taking 0.4 Gm. of dilantin and 0.2 Gm. of phenobarbital. On this program he was free of seizures for two years. In 1943, he started having episodes of peculiar behavior during which he would smear his drawing, turn over his stool, and leave his work without reason. It was necessary to terminate his employment. At home he was extremely irritable and had frequent periods during which he was unreasonable and performed many unexplained acts, such as urinating on himself and engaging in unreasonable tirades directed towards his family. At other times he was extremely tractable and was sorry for his unusual behavior. It became necessary for some of the family to stay with him most of the time. Dilantin was increased until he became ataxic; phenobarbital was increased until he slept most of the time. Tridione did not help. Mesantoin was added to a basic dosage of dilantin, 0.3 Gm., and phenobarbital, 0.2 Gm., and. after a period of three weeks on 0.3 Gm. of mesantoin, the patient became free of seizures and there was a marked change for the better in his personality. At present he has been free of seizures for three months and is again working. His present medication consists of dilantin, 0.2 Gm., and mesantoin, 0.5 Gm.

CASE 3.—A 25 year old man (H. H.) three years ago left home to report for work. He next remembered arousing two days later in the hospital. He was told that he was brought in by the police in a violent, intoxicated state and it was necessary to keep him under sedation to control his violent activity. The patient maintained that he did not drink. This sequence was repeated irregularly but at more frequent intervals until the patient was unable to keep a job because of his unexplained absences. He was told that he had been observed on occasions staggering down the street, and once he remembered having come to himself sitting on a curb near his home, approximately two hours after he left home to catch a bus. His electroencephalogram revealed an occasional burst of slow 3 per second flat topped waves. On a program of 0.3 Gm. of mesantoin, he had not had an attack in three months, whereas in the previous six months he had been averaging from three to four episodes a month.

The results of treatment of psychomotor seizures with mesantoin* are as follows:

Thirteen of 20 patients had been completely free of seizures for periods ranging from two to six months at the time of this report. Each of these patients was having an average of at least 2 seizures a month at the time mesantoin was started. Six patients reported a reduction of 50 per cent or more in the frequency of attacks. One patient could see no improvement and discontinued treatment after one month. Five patients felt that they were unusually drowsy on mesantoin but none was handicapped to the extent that he wanted to discontinue treatment. Three of these patients believed that their drowsiness diminished with time. No other side effects were noted.

Since the various types of epilepsy seem to respond differently to different medications, it is imperative that the variety or varieties of seizures the patient is having be established by the history, observation, and the use of the electroencephalographic record. In questionable cases of behavior disorders, hysteria, and other psychiatric disorders, the patient should be given adequate clinical trial on anticonvulsive medication.

*Mesantoin used in this study was supplied by the Sandoz Chemical Works, Inc., New York.

Our treatment plan for epileptic patients is quite flexible and is designed to meet the needs of the individual patient. If the patient is having pure petit mal attacks, he is given only tridione. Grand mal and a combination of grand mal and psychomotor seizures are treated by gradually increasing doses of dilantin to the limit of tolerance, usually manifested by beginning ataxia; if seizures have not been eliminated, dilantin is reduced by 0.1 Gm. and 0.1 Gm. of mesantoin is added and increased by 0.1 Gm. each week. Patients with psychomotor seizures alone are started on 0.1 Gm. of mesantoin. This dose is increased by 0.1 Gm. each week until the seizures are controlled. At the present time, we have 1 patient taking 1.1 Gm. a day. Our present average daily dose for adults is 0.4 Gm.

COMMENT

It is realized that the study here presented includes too few patients and that the time involved is too short for an accurate estimate of the effects of mesantoin in the treatment of psychomotor seizures. We have been greatly encouraged by the results so far obtained since all but 1 of the patients had had adequate trial on dilantin, phenobarbital, or tridione previous to beginning mesantoin. The dosage administered to most of the patients was quite small in comparison to that recommended by Kozol, and it is likely that even better results will be obtained as the dosage is pushed to the level of tolerance. Particularly gratifying was the lack of distressing side effects.

REFERENCES

1. Clein, N. W.: New Anticonvulsant in Treatment of Epilepsy; 3-Methyl 5,5-Phenylethylhydantoin (Hydantal); Preliminary Report, Northwest Med. 44:210-212 (July) 1945.
2. Kozol, H. L.: Epilepsy, Treatment with New Drug: 3-Methyl 5,5-Phenyl-Ethyl-Hyoantoin (Phenantoin), Am. J. Psychiat. 103:154-158 (Sept.) 1946.
3. Lennox, W. G.: Treatment of Epilepsy, M. Clin, North America 29:1114-1128 (Sept.) 1945.
4. Lennox, W. G.: Two New Drugs in Epilepsy Therapy, Am. J. Psychiat. 103:159-161 (Sept.) 1946.
5. Lennox, W. G.: Science and Seizures: New Light on Epilepsy and Migraine, ed. 2, New York, Paul B. Hoeber, Inc., 1946.
6. Loscalzo, A. E.: Treatment of Epileptic Patients with Combination of 3-Methyl 5,5-Phenylethyl-Hydantoin and Phenobarbital (Preliminary Report); J. Nerv. & Ment. Dis. 101:537-544 (June) 1945.
7. Tainter, M. L., and others: Influence of Various Drugs on Threshold of Electrical Convulsions, J. Pharmacol. & Exper. Therap. 79:42-54 (Sept.) 1943.

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ABSTRACT OF DISCUSSION

Dr. Martin L. Towler, Galveston: I would like to emphasize the necessity of keeping psychomotor seizures in mind in various episodic behavior disorders. We have, from time to time, admitted patients with so-called schizophrenic reactions which later cleared up, and a closer inspection of the history clarified the diagnosis of psychomotor epilepsy. The proper use of mesantoin in these cases often means the difference between normal living and institutional stay.

Although dilantin and mesantoin are closely related hydantoinates, it has been noticed that there is a definite synergistic action when the two drugs are used together. On the other hand, because mesantoin has a tendency to induce drowsiness, we rarely use mesantoin and phenobarbital in the same patient.

MODERN TRENDS IN DIAGNOSIS AND TREATMENT OF PARANASAL SINUS DISEASE WITH PARTICULAR REFERENCE TO ALLERGIC MANIFESTATIONS

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The revelation of the anesthetic properties of cocaine and its application to surgery was made by Koller[14] in 1884, and there followed the institution of many nasal operative procedures. In the foreword of the 1926 English translation of Hajek's treatise on sinus surgery, it was said that the original basic principles of anatomy, pathology, and sinus operations as stated in 1898 were on such a firm foundation that it was unnecessary to retract or modify a single basic principle originally presented. What a change has been brought in the intervening years in this thought! Richards[15] pointed out that until 1913 the transactions of the Laryngological, Rhinological and Otological Society did not mention the word "allergy" in any of its papers. For more than forty years there was no completely satisfactory explanation for the many failures in sinus surgery. It was with the development of a better understanding of nasal physiology, beginning some twenty years ago, that a new, more intelligent and conservative phase of nasal and sinus treatment was begun. The development of a comprehensive knowledge of the physiology of the nose and paranasal sinuses was essential to the improvement of treatment and to the understanding of the relationship of these processes to other body diseases. The interrelationship of the mucous membrane of the nose, turbinates, sinuses, the ciliary beat, and the mucous blanket are too well understood now to be elaborated upon here; however, infection and allergy are so closely associated that to mention one without the other would be misleading.

Nasal anatomy and physiology are basic, but in addition it is especially necessary to be acquainted with the general plan and action of the autonomic nervous system in order to have a plausible explanation of the altered physiology of the allergic response. Briefly stated, the ganglia of the sympathetic chain lie close to the vertebral column, while the parasympathetic ganglia lie within or close to the organs they supply. The sym-

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pathetic ganglia are remote from the terminal distribution of their nerves, while the parasympathetic nerves have restricted distribution, making central nervous system effects upon single organs easier. This anatomic arrangement excludes unitary action of the autonomic nervous system, and if these facts are applied to the allergic phenomena it can be seen why clinical allergy occurs in certain localized tissues, called shock organs, such as the nasal mucosa. The release of histamine from cell damage may cause abnormal secretion of acetylcholine and subsequent hyperactive symptoms in shock organs supplied by the parasympathetic nerves. Code[5] stated that histamine plays a role in allergic reactions, but the release of histamine is secondary to some other disruptive process in the cell itself.

Accurate diagnosis of pathologic conditions in the nose and paranasal sinuses involves a careful consideration of many diagnostic points, such as a careful history, evaluation of symptoms, recognition of objective changes in the nasal mucosa, roentgen examination of the sinuses, nasal cultures for bacterial diagnosis, and cytologic examination of the nasal secretion for cell type determination. Hansel[11] emphasized that approximately 40 per cent of nasal and sinus diseases develop on an allergic background. Radiographic and bacteriologic examinations are important and may be helpful diagnostically, but are less informative than the cytology of the nasal secretions in diagnostic classification. Borderline cases are difficult; the classic picture of either unmixed infective sinusitis or allergic sinusitis does not always prevail. The nasal mucosa is a definite index to all other mucous membranes of the body and is easily accessible for examination. In the cytologic study, secretion may be obtained from the sinuses by irrigation and concentrated by centrifuge, or may be taken from the nasal vaults by direct smear. Repeated examinations may be necessary as it may be impossible to draw accurate conclusions from a single smear. Properly to interpret the smears and fit them into the clinical picture, the rhinologist should examine the nasal smears himself; otherwise a great deal will be missed in the diagnosis and the proper management of the case. A smear can be made by having the patient blow the nose on waxed paper or cellophane, and then streaking the secretion on a glass slide. This is air-dried and stained with eosin (yellowish) 1:200 in methyl alcohol 95 per cent for ten seconds, flooded with distilled water further to dilute the stain as in Wright's stain, and washed with 95 per cent ethyl alcohol to remove the excess eosin. Following this the slide is stained with methylene blue, 1:1000, in methyl alcohol 95 per cent for ten seconds, again flooded with distilled water as above, and finally washed with ethyl alcohol 95 per cent and dried in the air. The use of neutral distilled water in this procedure is important to avoid decolorizing the methylene blue. The smears should be examined under the microscope by both low and high power; rarely is it necessary to use the oil immersion lens. Generally speaking, polymorphonuclear neutrophils are characteristic of bacterial infections, mononuclear cells of virus infections, eosinophils and basophils of allergy.

Although some progress had been made in the control of infections by chemotherapeusis prior to 1935, it was with the introduction of prontosil (a sulfa compound) in that year that intensive use of chemical agents against bacterial infections began. Very soon newer sulfa compounds were developed and came into use. The addition of drugs of this class has eliminated many office treatments and operative procedures on the nose and paranasal sinuses. The basic attack in nasal disease depends upon the differentiation of the etiologic factor, whether virus, bacterial, or allergic. It is only then that treatment may be properly directed. In planning treatment it is important not to do anything which might injure the mechanism of nasal cleansing or disturb the nasal physiology. The appreciation of the difference between virus and bacterial infection from allergy will determine the selection and the administration of sulfa compounds or the antibiotics. Frank nasal allergy will not be benefited by sulfa compounds or antibiotics, but if the condition is complicated with infection, this latter phase may be influenced.

The sulfa drugs may be used locally as powder or solutions, sprayed, dropped, or directly instilled by displacement or canula. A 2.5 to 5 per cent solution of sodium sulfathiazole alone or combined with a vasoconstrictor can be used for a mild bacteriostatic action. The instillation of sulfa solution directly into the sinuses, particularly the maxillary sinus and sphenoid, has been reported by Everett, James, Pagmine, and Chorte.[7] Brown[3] advocated blowing the sulfonamide powder directly into the sinus. There are some objections to the use of the sulfonamides locally as reactions may occur. The powdered drug may provide the nucleus for nasal concretions which may be difficult to remove. Fenton[9] mentioned dermatitis of the face which is especially prone to occur if

there are breaks in the mucosae. Other objections to uncontrolled sulfonamide therapy are masking of symptoms and frequent obscuring of roentgenograms of bones, making serial roentgenograms of limited value. Van Alyea[19] mentioned a recent report by several Chicago pathologists that certain cases of endarteritis nodosa of the brain and the heart have been encountered; this condition could be explained in no other way than that it was the result of the excessive administration of sulfonamides.

The use of the antibiotics, penicillin, tyrothricin, and streptomycin, is now at the peak of popularity. Pencillin used in inhalations is effective when the infection is in accessible areas. The inhalation may be divided by inspiring alternately through the nose and mouth using a daily treatment of from 30,000 to 40,000 units in 3 cc. of buffer solution. Barach[2] and associates have designed a special apparatus for the introduction of penicillin aerosol into the sinuses. Brown[4] reported a case with discoloration of filaform papillae, edema of the tongue with glossodynia, and a burning sensation of the tongue and pharynx due to the inhalation of penicillin. Very frequently there results a fiery red tongue and pharynx which may be confused with actual inflammation. In instillations directly into sinuses the dosage varies from 250 units per cubic centimeter to 10,000 units per cubic centimeter. Shea[17] advised the use of 30,000 units in a 5 cc. buffer solution. The use of reduced atmospheric pressure with penicillin also is reported by Andrews, Roth, and Ivy[1] using a simulated altitude of 8,000 feet. Solution of tyrothricin, 1 per cent, in distilled water instilled or displaced locally in the nose has not proved as efficacious as first reports indicated. Everett[7] reported its use in antrum irrigations in 50 cases without impressive results; however, he believed it might sterilize the sinus for a short period of time. Streptomycin appears to be a valuable therapeutic agent supplementing the sulfonamides and penicillin and filling the gap between them; however, its scarcity has limited its application in sinus therapy.

It might be well to state a few comparative facts about penicillin and streptomycin. (1) By weight, effectiveness of penicillin is about 200 times that of streptomycin. (2) Penicillin is acid while streptomycin is a strong organic base. (3) Streptomycin possesses a greater toxicity than penicillin. The most serious reaction is believed to be damage to the vestibular portion of the eighth nerve causing deafness, dizziness, tinnitus, and related vestibular symptoms; the exact histopathology of the eighth nerve damage is not known. (4) Streptomycin is active against certain gram-negative bacteria and some gram-positive bacteria that penicillin does not affect. It differs from penicillin in magnitude of dose, measurement of unit, height of blood level required for therapeutic effect, and in toxicity. It must be emphasized that in using sulfonamides, penicillin, or streptomycin the offending organism should be identified and studied before, during, and following treatment and its sensitivity to the drug or antibiotic determined. Misapplication of antibiotics will thus be minimized. Clinical failures in many cases are due to the improper use of these therapeutic agents, for instance, treating infections due to resistant organisms, maintenance of inadequate blood levels, and inaccessibility of some localized infections, or choice of an entirely wrong therapeutic agent.

The work of Hansel[12] in the diagnosis and treatment of allergy of the nose and sinuses has simplified the procedure so that it is no longer a tedious, time-consuming measure with doubtful and unsatisfactory results. The great majority of perennial nasal allergies are caused by inhalants, and by far the most common offender is house dust. The proper use of specific antigen is important and the employment of the low dosage therapy as advocated by Hansel is effective and safe from unpleasant reactions. The patient is treated according to his symptoms and not entirely by skin titrations. The underlying allergy which is present in at least half of the cases of paranasal sinusitis should be treated first before other therapeutic measures are undertaken or surgery is attempted.

In 1910 Dale and Laidlow[6] pointed out the similarity of the effects of histamine and anaphylactic shock, and the report initiated a progression of experimental evidence incriminating histamine as a cause of anaphylaxis. Currently based on this presumed role of histamine, many antihistamine drugs have become popular. It would not be amiss to mention a few now in use or misuse, such as hapamine, benadryl, pyribenzamine, and neoantergan. Synthetic histamine is of practical use in histaminic cephalgia as described by Horton,[13] and when limited to this condition, the results are excellent. The administration of histamine is recommended for patients with the symptoms of unilateral headache, sudden in onset, involving the temporal region, eye, face, and neck—the signs and symptoms follow distribution of the carotid arteries and their branches. The headache can be duplicated by the administration of histamine and it is relieved by epinephrine.

Injudicious use of the drug for other types of headaches is not to be encouraged. Hepamine (histamine azoprotein) is a drug that is a combination of histamine and globulin, and according to Fell, Rodney, and Marshall,[8] its particular value lies in the treatment of urticaria and angio-neurotic edema. When hapamine is administered to the allergic patient, it combines with certain cellular substances to form antibodies that are capable of neutralizing histamine (antihistaminase). That this is true is questioned by some authorities. Its value seems to lie in its nonspecific reaction, and it is of limited value in the treatment of nasal allergy and should not be substituted for proved therapeutic procedures. Benadryl and pyribenzamine are synthetic antispasmodic preparations that can prevent some of the pharmacologic actions of histamine. They act favorably in relieving certain types of urticarial dermatitis and to a lesser degree vasomotor rhinitis and hay fever. Both compounds have side reactions due to depression of the higher nerve centers. The use of histamine antagonists should be tempered with judgment. A cure and lasting improvement should not be expected; many patients fail entirely to respond to them. They exert only a temporary palliative action, and the remote toxicity of these drugs has not been sufficiently determined to date.

One of the most important influences in the course of sinus disease is the state of metabolism of the patient, or the body chemistry. Jarvis and Roberts[16] have emphasized the relationship of biochemistry to paranasal sinus disease and the value of appraisal of the autonomic nervous system. Recent biologic studies in vivo show that certain foodstuffs affect the mucous membranes and produce reactions with vascular phenomena varying from slight vasomotor changes to marked tissue edema. The nasal secretion is increased in amount, but there are no eosinophils present and the discharge is mucoid in character. Careful analysis of the patient's diet and nutrition is important in order to discover the offending substance. The use of roentgen therapy may be of limited value in certain restricted types of sinus disease, particularly in relieving pain.

It should be emphasized that the patient must be considered as a whole if the best results are to be obtained in the treatment of paranasal sinus disease; the proper drug or agent must be selected for treatment and properly administered and regulated.

SUMMARY

1. Successful therapeusis depends upon accurate diagnosis of the type of nasal disease present, and it must be founded upon a sound knowledge of the anatomy, physiology, and histopathology of the structures treated.

2. Nasal cytology is of paramount importance in diagnosis and in checking therapeutic response.

3. Use of sulfonamides and antibiotics is of value in properly selected cases in which the causative organisms are sensitive.

4. Therapy with histamine and nicotinic acid is effective for a high percentage of persons with histaminic, nonsurgical cephalgia or migraine, and in some instances for patients suffering from dysfunctions of the auditory nerve manifested by vertigo, deafness, and tinnitus.

5. No antigenic substance, sulfa compound, or antibiotic should be expected to correct nasal disabilities due to deviated septums, septal spurs, cystic turbinates, or other physical defects which surgery alone can help.

REFERENCES

1. Andrews, A. H.; Roth, L. W.; and Ivy, A. C.: On Use of Reduced Atmospheric Pressure in Treatment of Paranasal Sinusitis, Quart. Bull., Northwestern Univ. M. Sch. 15:46, 1941.
2. Barach, A. L., and others: An Apparatus for Introduction of Penicillin Aerosol, Ann. Int. Med. 24:97-103 (Jan.) 1946.
3. Brown, L. A.: Intranasal Application of Sulfonamide Powder, Ann. Otol. Rhin. and Laryng. 51:611-614 (Sept.) 1942.
4. Brown, R. L.: Clossodynia and Exfoliation of Papillae Filaments after Oral Penicillin. Arch. Otolaryng. 53:355-356 (March) 1947.
5. Code, C. F.: Source in Blood of Histamine-like Constituent J. Physiol. 90:349 (Aug.) 1937.
6. Dale, H. H., and Laidlow, P. P.: Physiological Action of B-Minazolylethylamine, J. Physiol. 41:318, 1910-11.
7. Everett, A. R.: Local Use of Penicillin and Sulfathiazole for Acute and Chronic Sinusitis, Arch. Otolarng. 44:468-473 (Oct.) 1946.
8. Fell, N. H.; Rodney, C.; and Marshall, D. E.: Histamine-Protein Complexes; Synthesis and Immunologic Investigation, Histamine-Azoprotein. J. Immunol. 47:237-249 (Sept.) 1943.
9. Fenton, R. A., in discussion on Ballenger, H.: Sensitivity from Insufflation of Powdered Sulfonamide Compounds in Acute Infections of Nose and Throat, in abstracts of Society Trans., Am. Laryngological Assn., 67th Annual Meeting, May 29-30, 1946, Arch. Otolaryng. 45:136 (Jan.) 1947.
10. Hajek, M.: Pathology and Treatment of Inflammatory Diseases of Nasal Accessory Sinuses, tr. and ed. by J. D. Heitger and F. K. Hansel, ed. 5 rev., St. Louis, C. V. Mosby, 1926, vol. 1.
11. Hansel, F. K.: Allergy of Nose and Paranasal Sinuses, C. V. Mosby, St. Louis, 1936.
12. Hansel, F. K.: Recent Advances in Otolaryngologic Allergy, Ann. Otol. Rhin. and Laryng. 51:1025-1049 (Dec.) 1942.
13. Horton, B. F.: Use of Histamine in Treatment of Specific Types of Headache. J.A.M.A. 116:377-383 (Feb.) 1941.
14. Koller, C.: Vorläufige Mittheilung über locale anästhesirung am Auge, Berichte ü. d. Versamml. d. ophth. Gesellsch; Stutt. 16:60-63, 1884.
15. Richards, L.: Four Decades of Nasal Allergy, Arch. Otolaryng. 39:465-469 (June) 1946.
16. Roberts, S. E.: Diagnosis and Treatment of Non-suppurative Sinusitis, Arch. Otolaryng. 42:198-207 (Sept.) 1945.
17. Shea, J. J.: Modern Treatment of Infections of Ear, Nose and Throat, Am. Acad. Ophth. and Otolaryng. Graduate Lecture Course, No. 36, 1946.
18. Van Alyea, O. E.: Management of Chronic Sinus Disease. Am. Otol., Rhin. and Laryng. 54:443-457 (Sept.) 1945.
19. Van Alyea, O. E., in discussion on McMahon, B. J.: Influence of Sulfonamide Compounds and Antibiotics on Future of Otolaryngology, in abstracts of Society Trans., Am. Laryngological Assn., 67th Annual Meeting, May 29-30, 1946, Arch. Otolaryng. 45:136-138 (Jan.) 1947.

806-807 Medical Professional Building.

ABSTRACT OF DISCUSSION

Dr. William J. Snow, Houston: The senior members of this group were initiated into the specialty of rhinology during the flowering of the concept that both the foundation and the cap stone were firmly laid in the field and that all a physician had to do to become proficient in the management of

his patients was to master the surgical techniques involved in the various operations. This has proved to be another of those mirages in medical progress, and at the moment rhinologists are listening intently to such papers as Dr. Gill has presented.

We are indebted to the allergists, or may I say the rhino-allergists, for modifying our understanding of the factors involved. Dr. Gill has pointed out the best means for separating the allergic from the infection cases. This is a step forward as it saves the rhinologist the unpleasant effort of attempting to explain why a well executed and expensive submucous resection has failed to give a patient a comfortable nasal airway.

Having made the diagnosis of a nasal allergy, the rhinologist is confronted with the problem of relieving or curing the patient. In that field it may be said that the millenium is not yet here.

ALLERGIC RETROBULBAR NEURITIS

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Acute retrobulbar neuritis is an involvement of the optic nerve, chiasm, or tract, usually characterized by sudden loss of vision in one or both eyes, with a central or paracentral scotoma. This loss of vision occurs very rapidly and frequently reaches it height within a few hours. Generally the field of vision shows no change, but occasionally the field may be contracted. At times there is pain on movement of the eye and tenderness on pressure.

What is seen in the eye depends on where the pathologic lesion occurs. If the lesion is far back, behind the entrance of the retinal vessels into the optic nerve, the fundus appears normal and the condition is called retrobulbar neuritis. When the lesion is close to the eyeball, changes occur in the disk and vary from a slight venous congestion to optic neuritis or even a papilledema.

The determination of the etiology has been difficult. Many causes have been given and several of these may be present at the same time. Because of the many causative factors, one gains the impression that the optic nerve is a very vulnerable structure. Benedict mentioned the possibility that many cases of so-called amblyopia are arrested cases of retrobulbar neuritis. Then, too, in determining the etiology of an attack of retrobulbar neuritis the ophthalmologist is confronted with the fact that this may be the first and, for many years the only, symptoms of multiple sclerosis. This optic neuritis tends to disappear with complete or nearly complete return of vision. Foster Kennedy pointed out that these episodes of multiple sclerosis resemble the happenings of localized allergic edema. The myelin sheath and supporting structures become swollen and compress the nerve bundles until atrophy and sclerosis develop.

Nicolle and Abt (1908) were first to demonstrate the possibility of allergic reactions occurring in the eye. They found that if animals were sensitized by an intraperitoneal injection of serum, subsequent intraocular injections of the serum produced a violent local inflammation. Later and more extensive work by others has proved very conclusively that the tissues of the eye can readily be sensitized both locally and as a part of a general sensitization, and that they are capable of severe allergic responses.

The description of the acute pathologic picture of retrobulbar neuritis is a description of the acute pathologic picture of allergy. The acute vascular changes in the optic nerve are characterized by spasm of the arterioles and increased capillary permeability leading to localized edema, tissue anoxia, and loss of function of involved tissue. The prolonged constriction of the arterioles produces changes in the capillary permeability by so limiting the access of blood to the capillaries that both they and the tissues they supply suffer from anoxia. In these cases of localized anoxia an examination of the blood shows negative results, as this is a local change and not a generalized anoxemia.

Duggan stated that "one could say that all conditions of this kind are due to allergy," and Moon pointed out that many conditions that are called toxic are essentially a state of anoxia. The basic arteriolar and capillary changes represent the final common pathway for a number of etiologic factors, but in this paper I wish to consider only the question of allergy as the etiologic factor.

A sufficient number of cases of retrobulbar neuritis due to allergic reaction have been reported to establish it as a definite cause, and this possibility should be considered in every case. Foster Kennedy reported that he had observed many attacks of retrobulbar neuritis coinciding with hives. Bedell reported a case where a man developed edema of the nervehead and retinal hemorrhages as a part of a serum reaction following tetanus antitoxin. Plumer had a patient who had edema of the nervehead and, following eradication of several suspicious foci of infection, gradually and completely recovered, but several weeks later had a recurrence after the ingestion of peanuts. Hayden and Cushman reported a case of recurrent retrobulbar neuritis which was completely relieved by elimination of the foods to which the patient had been found sensitive.

The treatment of the acute condition should be aimed at relieving the spasm of the arterioles and thus restoring the blood supply to

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the capillaries, thereby reducing their permeability and the tissue edema. This problem of increasing the peripheral circulation has been approached from several different angles, as will be seen from the following list of treatments advocated (1) vitamin B_1, thiamine chloride; (2) nicotinamide; (3) vitamin B complex; (4) foreign protein, especially typhoid vaccine intravenously; (5) acetylcholine, a vasodilator given in doses of 0.1 Gm. intramuscularly daily; (6) sodium nitrite, 0.5 to 1 cc. of 10 per cent solution; (7) pilocarpine sweats; (8) fever therapy; (9) intravenous iodides; (10) retrobulbar injection of 1/100 grain of atropine sulphate, (11) the remova of any foci of infection and the elimination from the diet, or from contact, anything that is suspected of being an offending allergen, and (12) desensitization to histamine.

CASE REPORT

CASE 1.—Miss E. H., age 19 years, was first seen in July, 1943, because of an itching and burning sensation in both eyes. The diagnosis was allergic conjunctivitis, which condition cleared up within a few days. Vision was 20/20 in both eyes.

On February 6, 1945, she returned, stating that for several days she had had a right sided headache, and that the right eye had been paining some especially when she moved her eyes quickly to one side. Her vision was 20/40 in the right eye and 20/20 in the left eye. The right eyeball was tender. The eye appeared normal and the pupils were equal and reacted to light and to accommodation. The intraocular tension was 23 mm. of mercury (Schiotz). The ocular media were clear and the fundus was normal, without any change in the optic disk or in the vascular system. No central scotoma was found; however, the patient stated that the test object in the central field of vision was not as clear in the right eye as it was in the left eye. Colored test objects did not have the same shade or density in the two eyes, but no loss of color perception was found.

She was given 50 mg. of thiamine chloride intravenously, and was to take 10 mg. by mouth three times daily. A complete physical examination was advised, but she had to leave town that afternoon for several days. When she returned on February 10, four days later, vision was less than 20/400 and she had a large central scotoma that included the blind spot. The fundus still appeared normal. A general physical examination by Dr. DeWitt Neighbors was completely negative. The blood Wasserman and Kline tests were both negative. She does not drink alcoholic beverages or smoke. Since she had had a few migraine type headaches and several attacks of allergic conjunctivitis, it was decided to check her for allergic reaction. She showed a marked reaction to pork, chocolate, eggs and pineapple, and a mild reaction to rice, almond, blackberry, and cantaloupe.

She continued to take 30 mg. of thiamine chloride daily, and was given 0.1 Gm. of acetylcholine intramuscularly daily for ten days and then 200 mg. of nicotinamide intravenously every other day.

Two weeks after her first visit vision had improved to 20/200, and the central scotoma was much smaller. Her improvement continued so that four weeks after the onset the scotoma had completely disappeared and vision was 20/30. By the sixth week vision had returned to normal.

On May 28 the patient returned with blurred vision, tender eyeball, and pain in the right eye on moving the eyes. She had spent the night with some friends and they had served bacon and eggs for breakfast. Vision in the right eye was 20/25, and no central scotoma was found. Vision in the left eye was 20/20. The fundi still appeared normal. She was given 50 mg. of thiamine chloride intramuscularly and was told to resume taking it by mouth. She returned the next day and her condition was unchanged. After she had been given the injection of thiamine chloride intramuscularly she mentioned that following the injection on the previous day she had itched all over and had developed a breaking out on several parts of her body. About an hour after this second injection she developed a generalized urticaria with marked itching. The thiamine by mouth was discontinued and she was given .5 cc. of epinephrine hydrochloride subcutaneously, repeated in three hours. The urticaria and the itching were nicely controlled. The next morning the patient had developed some discomfort, so she was given .25 cc. of epinephrine, repeated six hours later. By the next day all the urticaria and itching had disappeared, the tenderness of the eyeball was gone, and her vision was 20/20.

The patient was not seen again until November 6, when she had another attack of retrobulbar neuritis in the right eye following the ingestion of chocolate candy and cookies containing eggs. The right eyeball was tender, she had a small para-central scotoma and vision was 20/40. This attack responded promptly to acetylcholine daily for four days and sodium iodide intravenously the next four days. By this time the scotoma had disappeared and vision was 20/20.

In February, 1946, I asked her to report for a check-up to see if any atrophy of the nerve had followed these attacks. The examination was entirely negative and vision was 20/20 in both eyes. She stated that on several occasions her right eye had been a little tender and vision a little blurred after eating one of the foods to which she was sensitive. These symptoms were not severe enough to require treatment, and cleared up in from twenty-four to forty-eight hours.

On March 20 she drank several glasses of punch which contained pineapple juice, and ate several pieces of cake which were covered with white of egg frosting. The next day the right eyeball was tender, and vision was 20/25. No scotoma was found and no changes were seen in the eyeball. Acetylcholine was given intramuscularly and by the next day vision had again returned to normal.

The patient has had another mild attack caused by eating eggs. Histamine desensitization was tried. Starting with 0.01 mg. subcutaneously daily, the dose was gradually increased to 0.3 mg., when she had a reaction. The dosage was then reduced to 0.1 mg. and was repeated twice without reaction. At this point the patient moved out of the state and I have not heard from her again.*

CONCLUSION

It has been my purpose here:

1. Briefly to consider allergy as an etiologic factor in retrobulbar neuritis.

2. To mention some of the treatments used.

3. To report a case in which the patient has had 4 definite attacks of retrobulbar neuritis following the ingestion of foods to which she was sensitive, and who has regained normal vision after each attack following treatment with a vasodilator.

*AUTHOR'S NOTE.—This paragraph was added after the paper was furnished to the discussers.

REFERENCES

1. Bothman, L.: Clinical Manifestations of Allergy in Ophthalmology, Special Article, The 1941 Year Book of the Eye, Ear, Nose and Throat.
2. Carroll, F. D.: Retrobulbar Neuritis, Arch. Ophth. 24:44-54 (July), 1940.
3. Costen, J. B.: Retrobulbar Neuritis in Relation to Sinus Disease, Surg. Gynec. & Obst. 74:594-597 (Feb. 16) 1942.
4. Duggan, W. F.: Acute Retrobulbar Neuritis as a Manifestation of Acute Localized Tissue Anoxia, Arch. Ophth. 25:299-328 (Feb.) 1941.
5. Duke-Elder, W. S.: Text-Book of Ophthalmology, St. Louis, C. V. Mosby Co., 1940, vol. 2, p. 1457.
6. Hayden, H. C., & Cushman, B.: Problems in Nutrition in Allergy—Report of a Case of Optic Neuritis on an Allergic Basis, Illinois M. J., 80:500-503 (Dec.) 1941.
7. Kennedy, F.: Allergic Manifestations in the Nervous System, New York State J. Med. 36:469-474 (April) 1936.

Medical Arts Building.

ABSTRACT OF DISCUSSION

Dr. C. S. Sykes, Galveston: There has probably been nothing in ophthalmology quite so confusing as the etiology of optic neuritis. As an example, during recent years there have been three schools of thought: one that foci of infection accounts for most cases; another that most of them are caused by sinusitis; and another that multiple sclerosis is the preponderant factor.

There are probably very few in this group who have not experienced the embarrassment of having patients with optic neuritis successfully cured, only to show up a few months or years later with multiple sclerosis or some other disease of the central nervous system.

Now to these multiplied causes has been added that of allergy. We should feel grateful to Dr. Rathgeber for discussing that. There have been several reports of cases resulting from chocolate, milk, and tetanus antitoxin. I thoroughly agree that in every such case the possibility of an allergy should be considered and investigated most thoroughly and painstakingly. There is the likelihood that allergy has not been given sufficient attention as an etiologic factor

However, whether foci of infection, sinusitis, or allergy be considered as the cause of any particular case of retrobulbar neuritis, one should keep in mind that he may be dealing with one of the demyelinating diseases. Well do I remember six years ago seeing a case of optic neuritis following the administration of tetanus antitoxin, which cleared up completely. Eight months later this patient developed neuromyelitis optica.

Dr. Norma B. Elles, Houston: Dr. Rathgeber's interesting paper should impress upon us the importance of careful search for the offending agent in every case of retrobulbar neuritis, even though the immediate attack is controlled by the application of modern therapy.

The essayist did not mention, however, the most modern therapy now used in the treatment of allergy, that is, histamine and benadryl. Several investigators have long held that the release of histamine or a histamine-like substance may be directly responsible for the symptoms in various types of allergy.

If one accepts Foster Kennedy's view that the episodes of retrobulbar neuritis in multiple sclerosis resemble the happenings of localized allergic edema, the spectacular results in restoration of vision obtained in the treatment of such retrobulbar cases with histamine, recently reported by Dr. Bayard T. Horton of the Mayo Clinic, before a meeting of allergists, must be the result of histamine acting as a vasodilator. He stated that intravenous injections of 1 cc. of histamine diphosphate equal to 2.75 mg. of histamine base, dissolved in 250 cc. of normal saline solution, are given once a day, requiring about one and a half hours to administer. It should not be given faster than 80 drops per minute, or to the point of development of headache. However, headache can be controlled by the inhalation of oxygen. A most important caution to take is to have tubes used in the intravenous application perfect and thoroughly clean of foreign matter. Subcutaneous injections are not nearly as effective as the intravenous administration.

Benadryl (beta-dimethylaminoethyl benzhydryl ether hydrochloride) is another modern drug with histamine-like action. It may be given by mouth or intravenously. Fifty mg. by mouth can be given every four hours, usually for two days, then 50 mg. twice a day for sustaining effect. The patient should be warned of side effects, such as drowziness, dizziness, dryness of the mouth, and a certain feeling of nervousness. Intramuscular injections of benadryl are quite painful. The intravenous dose is 60 mg. to 100 cc. of normal saline solution, given over a period of ten minutes once a day.

In Dr. Rathgeber's case, as in other manifestations of food allergy, one would rather think of desensitizing or, more exactly, hyposensitizing, the patient by giving gradually increasing doses of histamine. Of the treatment that was given this patient, I should think the acetylcholine was most effective. Allergic reaction to vitamin B_1 can be avoided by giving the synthetic crystals rather than animal or plant extract. Typhoid antigen, I believe it is agreed, should never be given in retrobulbar neuritis cases.

No doubt many ophthalmologists have seen and treated retrobulbar neuritis cases with vasodilators in the immediate attack, as I have, and never inquired into the question of allergy. In the treatment of eye cases due to allergy, four factors are to be considered: (1) immediate relief; (2) determination of the etiologic factor; (3) education of the patient to the multiple sources where his particular allergen is to be found, and (4) desensitization to the cause, if this is possible.

There still remains much confusion as to the application of the elusive histamine.

The day has come when ophthalmologists should collaborate closely with well-informed allergists.

PREGNANCY RISK OF RHEUMATIC FEVER PATIENTS

A method of estimating the risk involved in pregnancy for women suffering from rheumatic fever was presented at the scientific sessions of the American Heart Association in Atlantic City, N. J., in June by Dr. Joseph Bunim and Dr. Jeannette L. Rubricius, New York. Based on studies of 142 women at the New York University Division of Bellevue Hospital, the report points out that congestive heart failure is the most common cause of death in pregnancy among persons who have rheumatic heart disease. The infant mortality rate for the group of patients with congestive heart failure included in the study was three times as high as for patients who had heart disease without congestive heart failure and four times as high as for normal pregnant women delivered on the same obstetrical service.

In determining the outlook in the pregnancy of these women the duration of rheumatic fever, age, functional capacity of the heart, history of previous congestive heart failure, type of valvular damage, size of heart, nature of earlier rheumatic manifestations, and number of previous pregnancies were considered. The important signs were found to be those which helped to foretell congestive heart failure. Data collected under well controlled conditions indicate that pregnancy per se does not alter the course of the patient's rheumatic heart disease.

No deaths from congestive heart failure occurred among the 130 patients who remained under the care of the investigators during pregnancy and parturition.

TEXAS PUBLIC HEALTH PROGRAM NEEDS TEXAS TEAMWORK

WILLARD OGLE, D.D.S., F.A.C.D.
Secretary-Editor, Texas State Dental Society
Trustee, American Dental Association
DALLAS, TEXAS

In Texas, we have tolerated for too long a callousness within our professional ranks that is antagonistic to our traditional way of life. Texans are justified in considerable pride concerning state resources and state achievement; however, too much emphasis on the state support given to public health is sheer pretentiousness. It must be admitted that professional men and women skilled in health services have failed miserably in assuming their inherent responsibilities for public health matters. Therefore, it should afford little surprise that disturbing elements from out of the state now propose remedial but dubious measures in the administration of a public health program.

Teamwork is defined by Webster as "work done by a number of associates, all subordinating personal prominence to the efficiency of the whole." At this particular time we are not thinking of State Health Department personnel, for teamwork is fundamental for their success. The motives of public health workers may vary. Such persons may be alert for personal glory, may wish to build self-esteem, or perhaps may be among the fortunate persons to present new discoveries. The vast majority of public health workers are making great sacrifices for the betterment of mankind. For their sincerity of purpose and present worthy accomplishments, they deserve the deep gratitude and profound admiration of the public.

There is an urgent need for a united effort by all of the allied organizations directly and indirectly involved in health services. Preceding the fulfillment of such coordination, there must develop an intelligent and inspirational understanding of individual and collective responsibilities essential to health service.

Public health service today is the result of evolution in forty-eight different developments. Therefore, it is not correct to assume that all problems are common to the health work in all states. Yet there are certain basic similarities prevailing in public health service wherever provided; these similarities are an outstanding influence in the development and progress of such a program. Universal fundamentals are found in the need, the know-how, and financial support.

Read before the Section on Public Health, State Medical Association of Texas, Annual Session, Dallas, May 7, 1947.

In considering state health services, it must be kept in mind that the Constitution of the United States has not jeopardized responsibility and authority for the preservation of public health within the boundaries of the respective states. Each state remains responsible for the health conditions of its citizenship. Thus, in Texas, public health support is largely the state's own responsibility.

I am certain that Texas physicians share the statewide gratification for the greater support of public health services in the program outlined by Governor Beauford H. Jester. The Governor has recommended that the Legislature provide the Health Department with a $3,000,000 appropriation; in other words, increase state expenditures for public health from 8 cents to 50 cents per capita. Such manifestation indicates that the efforts of a few are at last producing tangible evidence of progress. The advancement which might have been realized could such support have been secured long ago can only be surmised.

It is a disgrace that trained health workers in Texas continue to endure reluctant and poorly informed haggling over vital problems incident to providing adequate financial support for the state public health program. Little wonder that Texas ranks forty-third among the states in providing financial support for public health work. Such acquiescence on our part is an invitation to undesirable elements planning for the displacement of primary objectives and responsibilities for public health needs. An overwhelming avalanche of legislative proposals today portends disastrous results unless there is an awakening within our professional organizations, and improved teamwork for an adequate state supported health program. In this connection it is impossible to underestimate the encouragement for communistic trends given by an inadequate health program. Because of a lack of insistence on our part, the public health program in Texas suffers vast deficiencies. Our attitude is hastening the approach of governmental prescriptions for the direction of state affairs. Because of the restricted financial state budget upon which public health work has been compelled to depend, progress has been curtailed tremendously. This miserly state concept has stigmatized the fair name of Texas just as certainly as it has frustrated proper advancement. In utter stupidity, we have followed the line of least resistance, failing to coordinate our professional strength to the end that those responsible for establishing an adequate state appro-

priation should have had no hesitancy in so doing.

Public health should be synonymous with people's health. It should be deeply concerned with hazards to health and wholly unrestricted in the application of the best known methods for reducing or eliminating health hazards. However, such accomplishments are impossible on a budget of 8 cents per capita. The State Department of Health should be the most potent power for maintaining healthful conditions. At 8 cents per capita, however, the activities of the Health Department have been so restrained that conservative expansion of activities over and above the most elementary is accomplished generally by personal sacrifice on the part of paid personnel. Up to two years ago, the Health Department functioned on a basis of 6.5 cents per capita, and for the past two years on 8 cents per capita. It must be evident to the informed citizen that the public health program has been mainly a matter of by guess and by God with dirty, smelly, little pigs and the hagborn getting the best of the bargain. That Texas has not experienced greater tragedy because of epidemics in recent years must be a manifestation of Divine Providence.

Up to now, because of a lack of professional teamwork, the State Department of Health has been the recipient of an unwelcomed shower of good intentions plus a great demonstration of professional apathy. Therefore, any consideration of the tremendous potentiality involved because of curtailed state health support should impress one with the predominant influence of the Great Physician. The state per capita of 8 cents for public health is puny and pitiful. Our professional organizations are censurable for failure to exercise the intelligence implied in the extraordinary privileges granted with our professional status. Proper teamwork could have rectified many deficiencies long ago, but now we face a situation where political interests have the ball and are crowding us to our own goal line. Selfish interests have discovered the vulnerability of professional indifference. Apparently, it has required a Wagner-Murray-Dingell episode to stir us to proper action. Such threats at the national as well as the state level could leave little doubt of the urgent need for teamwork in support of an adequate public health program for Texas.

Originally public health service was a community affair. Some three generations later state legislatures were prevailed upon to legalize state boards of health. That tardy and probably reluctant legislation was perhaps the result of the last-ditch-stand of teamwork. Legislatures failed to understand, or at least to respond, to health needs in those early days just as they fail to respond today. Teamwork plus proper leadership by the professions must be realized. Regardless of armed fortifications, financial reserves, underground resources, atomic power, regardless even of the famed Texas Navy, state security is more dependent upon the level of health of its citizenship than on other considerations. By proper teamwork, we can release present financial shackles, obstructing and impeding progress in preventive health measures in Texas today.

I do not underestimate the valuable contributions of state agencies for the betterment of public health not directly under the guidance of the State Health Department. While such agencies are on the periphery of the state health program, their activities are highly essential. The nucleus around which a state health program must develop, however, is the Board of Health. A study of its program, restricted because of inadequate appropriations, reveals how greatly circumscribed the activities of the Board of Health have been. If the inadequate appropriation was not known, there might be opportunity for the use of the word "bungling" in interpreting health activities in Texas. Splendid as it is to know that the present state administration is interested in this problem, it must be recognized that there are involved problems and solutions far beyond the concept of lay understanding. Governors and legislators are not trained to understand health matters as are members of our professions, just as we are not expected to understand conditions relating to public utilities as readily as those interested in that particular field. Therefore, teamwork is essential if we are better to inform the legislators in this matter.

Federal legislation authorizing grants-in-aid depend greatly upon the support to health needs evidenced within the state itself, and by its own financial response to the needs. Our state must be more properly directed toward improved understanding of health needs. It is absurd to continue to rely upon the State Health Officer as our official representative with the Board of Control and the Legislature in endeavoring to obtain increased state funds for health work. That is not his job. Our apathy is revealed by the multiplication of communicable diseases and preventable health hazards—tuberculosis, cancer, maternal and child health problems, venereal diseases, dental ills, typhus threats, dysentery, nutritional deficiencies, inade-

quate sanitation; in short, the full list of inadequately state supported health measures actually invites regimentation of the professions. What are we, representing the professional organizations, doing to remedy this situation in Texas?

Facts speak louder and far more eloquently than indifferent intentions. Good intentions have thus far failed to provide necessary funds for a proper expansion of the state health program. By our actions we tacitly admit satisfaction with a condition of filth, disease, and stench. There is a possibility that after our dulled esthetic senses have been offended beyond human endurance we may witness a public awakening, accompanied by demand for an end to the present lack of financial support. We are tolerating health conditions that are far from wholesome and that increase in severity by the day. I seriously doubt if a system of health administration under strictly political dictation could create greater laxity and deterioration of health standards than we have today established in Texas. Our security is at stake; we have the know-how—hence, our course, as professional men and women trained in health matters, is obvious.

Few today realize the sacrifices being made by paid personnel in the State Department of Health in their endeavor to carry forward a proper preventive health program. Allow an emergency to arise, an epidemic to rear its ugly and malignant head, and we shall witness the incongruous reaction of mortal man, who is quick to become alarmed when facing a crisis, but apt to forget when all is serene.

With the present advancement possible in preventive health programs, the real cost of such a program is actually decreased; even with the depreciation of the dollar, budgets of today will provide more health care than equal budgets formerly would, because of scientific progress. A state health program is tremendously dependent upon economics.

The public has not the training or the facilities to understand the why and how of these matters. The public does not understand why vitamins do not make Tarzans of everyone, or wholly eliminate malnutrition. All indications would imply that the public has been informed by the wrong group. At least, there is evidence that our professional organizations have failed to exercise proper teamwork in that the public (and the legislators) should be better informed concerning health needs. We have been too concerned in bickering over licensure problems. We are obligated, as professional men and women, to render greater service to the public, "with personal prominence subordinated to the efficiency of the whole."

Development of an adequate preventive health program is no problem. The problem is educational. For instance, the salary range for paid personnel in state public health serice is amazing. I wonder that we are able to hold qualified workers. That such experts do remain is due to personal sacrifices to ideals. Certainly there is little encouragement that the inadequacy of their salaries will receive official notice.

Not long since, in speaking before the annual meeting of the Texas Public Health Association, I suggested that we might better use our talents and time in aiding passage of legislation to provide that only those persons shall be eligible to hold seats in the Texas Legislature who have one foot in the grave, or a record of illness of one or more years duration. Such a group as that, I feel certain, would have a proper understanding of health needs.

At the latest hearing on appropriations for public health work by the Senate Finance Committee at Austin, I was shocked to hear some of the opinions expressed by its members. The lack of understanding by the Senators of fundamentals in health work is astounding. For instance, it was pointed out by a prominent grocery and meat manager from East Texas that inexperienced young men are being used as food inspectors because sufficient money for trained personnel is not available. In his largest shop, a foul odor was noticed in the refrigeration meat rooms. Food inspectors passed this by with indifference. Carpenters and plumbers were called in, and upon removing the slatted floor, found several inches of accumulated filth around the refrigeration pipes.

One Senator vociferously objected to blood banks, stating that if Austin should be the depository, his constituents would never receive blood in time to save lives. It was pointed out that as rapidly as funds were made available, county-city health units would be increased and refrigeration facilities established for local depositories. Even in the face of scientific facts, I am not certain that the Senator was convinced of his error in judgment. Even with the dramatic explanation from a Houston representative whose maximum period of four months to live was dependent upon transfusions, which could be provided only at his individual expense of $35 per transfusion, I fear the committee member was not fully impressed.

When we ourselves are so indifferent, what argument do we have against public apathy? No greater heritage could we leave

our children in Texas than a program assuring the highest possible health level. Our professional organizations must provide leadership for this program; we must maintain leadership; we must spend all that is necessary for armed might; but above and beyond that, we must assure security of health. It is unfortunate that in Texas, with our advanced knowledge of health affairs, we permit thousands upon thousands of citizens to be denied the benefits of public health services. Teamwork is necessary. Governors and legislatures have not been sufficiently informed to assure an adequately financed health program. Professional pressure must lead public demand. Professional leadership must take over. We have the technical know-how for greatest expansion.

Special committees from our respective organizations, charged with the specific task of aiding and guiding proper legislation in support of an adequate health program, will materially speed the day when our greatest asset—health—will be properly considered and protected. The opportunity is present, but not for too long. If we fail, we may be sure that others with questionable motives will take over. It would be eminently desirable that our organizations give this objective priority if the full benefits of modern medicine and allied health measures are to be made freely available for the citizenship in Texas.

Texas physicians can spark the effort needed for writing the final chapter prior to a full realization of a state public health program second to none. I plead for your leadership, for your cooperation, in behalf of a very ill public health situation.

Medical Arts Building.

ABSTRACT OF DISCUSSION

Dr. George A. Gray, Fort Worth: The fact that we do not have sufficient money for public health in Texas means to me not that there is any shortage of money, but that people neither understand nor appreciate the true value of health service. When they do understand, I believe the necessary funds will be made available promptly. For this reason it behooves all of us in public health work to give an increasing amount of attention to education of the public. This does not mean that we should exaggerate, but that we should never consider a project or a program complete until after we have given the widest possible publicity to a proper interpretation of its meaning and benefit to the people. It is recognized that we work at a considerable disadvantage for the reason that, in the minds of average citizens, there is practically no glamor attached to prevention of disease, while people talk for years about successful treatment.

All that Dr. Ogle has said concerning the importance of support of our public health program by doctors in private practice cannot be overemphasized. It is certainly my belief that the surest and most practical way for the profession to avoid socialization of medicine is a vigorous support of all legitimate public health practices. In that way conditions citied by proponents of socialized medicine as reasons for such a system can be removed completely.

Dr. Ogle, closing: Health is the responsibility of the individual, family, community, state, and nation. When health services must be provided, the community should determine methods and so forth.

Senator Taft recently stated as his conviction that "Federal legislation authorizing grants-in-aid to states for health services should be provided. When it comes to free medical and dental care for children and adults I can see no basis for Federal action except to take care of those unable to pay for health services themselves. We have not reached a point in America where the Government is going to support men and women able to support themselves."

Gradually the federal government is withdrawing valuable financial aid, and there is only one way to offset this—the medical and dental and allied interests must better organize in an effort to seek increased state appropriations for an adequate state health program. At 8 cents per capita, Texas is unable to provide a full, rounded health service.

I think the Legislature will soon provide an increase over the last health budget, but it is my opinion that that increase will be far from meeting the needs. Our professional organizations have an obligation—what shall we do?

CORONARY THERAPY WITH DICUMAROL

The treatment of diseased coronary vessels with dicumarol, a drug which delays clotting of the blood, in addition to the established methods of control, represents the first step in a positive approach to the problem, states a St. Louis physician in the June 7 issue of *The Journal of the American Medical Association.* O. P. J. Falk, M. D., assistant professor of clinical medicine, St. Louis University School of Medicine, believes that the drug may combat the tendency for extension of the thrombus and may reduce the tendency toward phlebothrombosis.

Dicumarol is prepared from spoiled sweet clover. The drug was discovered when hemorrhagic disease, studied in cattle, was traced to the eating of improperly cured hay or silage from the common sweet clovers.

Patients must be hospitalized before dicumarol treatment is begun. However, the author points out, treatment with this drug, which is given by mouth, should not be attempted unless the laboratory is prepared to make daily tests of the clotting ability of the blood of each patient. The author does not advise dicumarol for patients who bleed easily, have advanced liver disease, a history of ulcer or recent hemorrhages of the gastro-intestinal tract and kidney damage.

WATER IS BEST MOUTH WASH

Pure water is the best mouth wash, according to the Council on Dental Therapeutics of the American Dental Association.

Next best to plain water as a mouth wash is a saline solution prepared by dissolving two teaspoonfuls of table salt in one quart of distilled water. Medicated mouth washes should be used only when prescribed by the dentist or physician, the Council recommends.

"The fact that many persons rely on medicated mouth washes when they should visit a dentist or physician must result in numerous instances in serious delay in obtaining necessary treatment," the Council reports. "For example, bad breath and sore throat are often symptoms of disease. The person who depends on mouth rinses to eliminate such symptoms or to prevent their development is fooling himself, perhaps to his own detriment."

MISCELLANEOUS

COMING MEETINGS AND CLINICS

State Medical Association of Texas, Houston, April 26-29, 1948. Dr. B. E. Pickett, Sr., Carrizo Springs, President; Dr. Holman Taylor, 1404 W. El Paso St., Fort Worth 3, Secretary.

American Medical Association, House of Delegates, Cleveland, January 5-6, 1948; Special Scientific Session, Cleveland, January 7-8, 1948; Regular General Session, Chicago, June 21-25, 1948. Dr. Edward L. Bortz, Philadelphia, President; Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

Southern Medical Association, Baltimore, November 24-26, 1947. Dr. E. L. Henderson, Louisville, Ky., President; C. P. Loranz, Empire Building, Birmingham, Ala., Secretary-Manager.

Southwest Allergy Forum, Oklahoma City, Okla., Spring, 1948. Dr. Herbert J. Rinkel, Kansas City, Mo., President; Dr. Fannie Lou Leney, 1200 N. Walker, Oklahoma City, Okla., Secretary.

Texas Association of Medical Anesthetists, Houston, April 26-29, 1948. Dr. Robert A. Miller, San Antonio, President; Dr. Harvey C. Slocum, 928 Strand, Galveston, Secretary.

Texas Association of Obstetricians and Gynecologists, Fort Worth, November 21-22, 1947. Dr. J. E. Kanatser, Wichita Falls, President; Dr. Julius McIver, 714 Medical Arts Building, Dallas, Secretary.

Texas Chapter, American College of Chest Physicians, Houston, April 26-29, 1948. Dr. H. Frank Carman, Dallas, President; Dr. Charles J. Koerth, Kerrville, Secretary.

Texas Club of Internists. Dr. N. D. Buie, Marlin, President; Dr. Victor E. Schulze, San Angelo, Secretary.

Texas Hospital Association, Dallas, March 4-6, 1948. Mr. Thomas H. Head, San Angelo, President; Mrs. Ruth Barnhart, 2210 Main St., Dallas, Secretary.

Texas Neuropsychiatric Association, Terrell, Fall, 1947. Dr. A. Hauser, Houston, President; Dr. David Wade, 604 Capital National Bank Bldg., Austin, Secretary.

Texas Orthopedic Society, Houston, April 26-29, 1948. Dr. Walter Stuck, San Antonio, President; Dr. Ruth Jackson, 3629 Fairmount St., Dallas, Secretary.

Texas Pediatric Society, Houston, October 17-18, 1947. Dr. J. R. Lemmon, Amarillo, President; Dr. John E. Ashby, 3610 Fairmount, Dallas, Secretary.

Texas Public Health Association, Houston, February, 1948. Dr. S. W. Bohls, San Antonio, President; Mr. Earle W. Sudderth, Dallas County Health Department, Court House, Dallas, Secretary.

Texas Radiological Society, Temple, January 17, 1948. Dr. C. A. Stevenson, Temple, President; Dr. R. P. O'Bannon, 650 Fifth Ave., Fort Worth, Secretary.

Texas Railway and Traumatic Surgical Association, Houston, April 26-29, 1948. Dr. Linwood H. Denman, Lufkin, President; Dr. Ross Trigg, First National Bank Bldg., Fort Worth, Secretary.

Texas Society for Mental Hygiene, El Paso, March 11-13, 1948. Dr. Ozro T. Woods, Dallas, President; Mrs. Elizabeth F. Gardner, 1617 Watchhill Road, Austin 21, Executive Secretary.

Texas Society of Gastroenterologists and Proctologists, Houston, April 26-29, 1948. Dr. George Underwood, Dallas, President; Dr. Carl Giesecke, 1602 Nix Professional Bldg., San Antonio, Secretary.

Texas Society of Ophthalmology and Otolaryngology, Houston, December 5-6, 1947. Dr. W. E. Vandevere, El Paso, President; Dr. E. D. Dumas, 425 Medical Arts Bldg., San Antonio, Secretary.

Texas Society of Pathologists, Galveston, January 25, 1948. Dr. D. A. Todd, San Antonio, President; Dr. C. T. Ashworth, Southwestern Medical College, Dallas, Secretary.

Texas State Heart Association, Houston, April 26-29, 1948. Dr. DeWitt Neighbors, Fort Worth, President; Dr. Merritt B. Whitten, 1421 Medical Arts Bldg., Dallas, Secretary.

Texas State Urological Society, Dallas, February 2, 1948. Dr. Jo C. Alexander, Dallas, President; Dr. Hub Isaacks, Medical Arts Bldg., Fort Worth, Secretary.

Texas Surgical Society, Galveston, October 7-8, 1947. Dr. Walter Stuck, San Antonio, President; Dr. Truman G. Blocker, University of Texas Medical Branch, Galveston, Secretary.

Texas Tuberculosis Association, Dallas, September 15-16, 1947. F. K. Dougharty, Liberty, President; Miss Pansy Nichols, 700 Brazos, Austin, Executive Secretary.

Second. Big Spring, District Society, Big Spring, October or November, 1947. Dr. R. B. G. Cowper, Big Spring, President; Dr. H. A. Briggs, Midland, Secretary.

Third, Panhandle, District Medical Society. Dr. C. E. High, Pampa, President; Dr. Kenneth Flamm, Amarillo, Secretary.

Fourth District Society, Coleman, October 22, 1947. Dr. Glenn H. Ricks, Brady, President; Dr. J. C. Young, Coleman, Secretary.

Fifth and Sixth Districts Society. Dr. Kleberg Eckhardt, Corpus Christi, President; Dr. Charles Tennison, Nix Professional Building, San Antonio, Secretary.

Seventh, Austin, District Society, Spring, 1948. Dr. M. I. Brown, Austin, President; Dr. David Wade, 604 Capital National Bank Bldg., Austin, Secretary.

Eighth, Ninth and Tenth Districts, South Texas, Society. Dr. T. O. Woolley, Orange, President; Dr. James Greenwood, Jr., 518 Medical Arts Bldg., Houston 2, Secretary.

Eleventh District Society, Jacksonville, October 29, 1947. Dr. L. L. Travis, Jacksonville, President; Dr. C. B. Young, 929 S. Confederate, Tyler, Secretary.

Twelfth, Central Texas, District Society, Waco, January 13, 1948. Dr. W. Howard Wells, Waco, President; Dr. H. F. Connally, Jr., Amicable Bldg., Waco., Secretary.

Thirteenth, Northwest District Society, Mineral Wells, November 11, 1947. Dr. Frank Hodges, Abilene, President; Dr. A. D. Roberts, Medical Arts Bldg., Fort Worth, Secretary.

Fourteenth District Society. Dr. H. Frank Carman, Dallas, President; Dr. James Jeter, Ennis, Secretary.

Fifteenth, Northeast Texas, District Society, Gilmer, September 25, 1947. Dr. Joe Roberts, Longview, President; Dr. S. W. Tenney, Marshall, Secretary.

CLINICS

Dallas Southern Clinical Society, Dallas, March 15-18, 1948. Miss Thelma J. Webb, Medical Arts Bldg., Dallas 1, Executive Secretary.

International Postgraduate Medical Assembly of Southwest Texas, San Antonio, January 27-29, 1948. Dr. W. W. Bondurant, Jr., 711 E. Houston St., San Antonio, President.

North Texas and Southern Oklahoma Fall Postgraduate Conference, Wichita Falls, October 14, 1947. Dr. K. W. McFatridge, Hamilton Bldg., Wichita Falls, Secretary.

Oklahoma City Clinical Society, Oklahoma City, October 27-30, 1947. Executive Secretary, 512 Medical Arts Bldg., Oklahoma City.

Post Graduate Medical Assembly of South Texas, Houston, December 1-3, 1947. Secretary, 229 Medical Arts Bldg., Houston.

TUMOR SEMINAR AT SAN ANTONIO

Col. J. Earle Ash, former curator of the Army Medical Museum and director of the Army Institute of Pathology, Washington, D. C., will conduct the fourth annual one-day tumor seminar sponsored by San Antonio pathologists. The seminar, which will begin at 9 a. m. October 5 at the Medical and Surgical Hospital, San Antonio, will be a study of tumors and granulomas of the skin, and will be open to pathologists and dermatologists of Texas who wish to attend. No fee will be charged.

It is planned to send a box of slides, together with the histories of the cases, a week before the meeting to each person who has made application to attend the seminar. Since only fifty such boxes are being prepared, prospective participants are urged to write early to Dr. B. F. Stout, Medical Arts Building, San Antonio. Each person attending the seminar is requested to bring his own microscope.

Twenty-five slides of material furnished largely by the Army will be used at the seminar. Additional corollary lantern slides from the Army Institute of Pathology will be shown.

A. M. A. SOUTHERN REGIONAL CONFERENCE

A southern Regional Conference sponsored by the American Medical Association will be held at the Roosevelt Hotel, New Orleans, October 23-24, with Dr. James R. McVay, chairman of the A. M. A. Council on Medical Service, presiding.

The conference, which is open to all physicians, will include round-table discussions on good medical society public relations, prepayment medical and surgical care plan problems, industrial health problems of the south, and rural health problems. In addition, Dr. George F. Lull, Chicago, secretary and general manager of the American Medical Association, will speak on "Liaison between A. M. A. and the Component Medical Societies," and Dr. Joseph S. Lawrence, director of the Washington, D. C., office of the Council on Medical Service, will describe "The Washington Legislative Picture."

Physicians who plan to attend the conference are urged to notify in advance the local arrangements chairman, Mr. Frank Lais, Jr., Louisiana State Medical Society, 1430 Tulane Avenue, New Orleans 13, particularly if hotel accommodations are desired.

MEDICAL OFFICERS RETURNING TO TEXAS*

NAME	Serv.†	Location	Release Date
Bell County			
26. Brown, Jesse B.	A	Belton	
Bexar County			
180. Estrada, Ramiro P.	A	San Antonio	
181. Hill, Lucius D., III	A	San Antonio	
182. Salter, John J.	A	San Antonio	
183. Simmang, Arthur V.	A	San Antonio	
Brazos-Robertson Counties			
11 McKemie, Jack F.	A	Bryan	
Collin County			
10. Taylor, Surse J., Jr.	A	McKinney	
Dallas County			
271. Alston, Herbert M.	A	Dallas[1]	
272. Battle, William D.	A	Dallas	
273. Granger, Wayne H.	A	Dallas	Apr., 1946
274. Haley, Arvel E.	A	Dallas	
275. Harvill, T. H.	N	Dallas	Feb., 1947
276. McLaurin, Robert L.	A	Dallas	
277. Perkins, Robert B.	A	Dallas	
278. Rothschild, Joseph E.	A	Dallas	
279. Smith, Jack C.	A	Dallas	
280. Springall, Francis S.	A	Dallas	
Dawson-Lynn-Terry-Gaines-Yoakum Counties			
12. Daniell, Charles B.	A	Brownfield	
Ector-Midland-Martin-Howard-Andrews-Glasscock Counties			
19. Swift, E. V.	A	Big Spring[2]	
El Paso County			
75. Swanson, John D., Sr.	A	El Paso	
Galveston County			
70. Jones, Edgar F., Jr.	A	Galveston	Mar., 1946
Gregg County			
20. Velinsky, Morris	A	Kilgore	
21. Wade, T. W.	A	Kilgore	
Grimes County			
6. Nemir, Paul J.	A	Navasota	
Hamilton County			
5. Hafer, William F. L.	A	Hico	
Hansford-Hemphill-Lipscomb-Roberts-Ochiltree Counties			
3. Matthis, Austin W.	A	Darrouzett	
Harris County			
304. Adamo, Dominick C.	A	Houston	
305. Butler, Donald B.	A	Houston	
306. Lowe, Percy E.	A	Houston	
307. Olin, Walter G., Jr.	A	Houston	
308. Salmeron, Pedro, Jr.	A	Houston	
309. Shannon, Arthur W., Jr.	A	Houston	
Harrison County			
11. Murphy, Maurice	A	Marshall	
Hidalgo-Starr Counties			
18. Wisner, Frank B.	N	Mercedes[1]	Jan., 1946
Hopkins-Franklin Counties			
6. Longino, Joseph B.	A	Sulphur Springs	
Jefferson County			
62. Page, Joseph H.	A	Beaumont[2]	
Kimble-Mason-Menard-McCulloch Counties			
9. Granville, George E.	A	Brady	
McLennan County			
61. Crow, Howard G.	A	Waco	
62. Watman, Morris	A	Waco	
Nolan-Fisher-Mitchell Counties			
13. Graham, James M.	A	Sweetwater	
Palo Pinto-Parker Counties			
11. Rohrer, Vern	A	Springtown	
Potter County			
36. Jacobson, Merlin E.	A	Amarillo	
37. Klingensmith, W. R., Jr.	A	Amarillo	
San Patricio-Aransas-Refugio Counties			
13. Dawson, William D.	A	Mathis	
Tarrant County			
99. Bowden, Andy J., Jr.	A	Fort Worth	
100. Davis, James H.	A	Fort Worth	
101. Etier, Edgar L., Jr.	A	Fort Worth	
102. Ross, Nealie E., Jr.	A	Fort Worth	
Tom Green-Coke-Crockett-Concho-Irion-Sterling-Sutton-Schleicher Counties			
27. Browne, Charles F.	A	Sonora	
Travis County			
75. Faubion, Darrell B.	A	Austin	
76. Robison, Edward W.	A	Austin	
77. Ross, Raleigh R.	A	Austin[3]	Dec., 1946
78. Wiesner, Jerome J.	A	Austin	Feb., 1947
Upshur County			
2. Barker, Frank R.	A	Gilmer[4]	Mar., 1946
Wharton-Jackson-Matagorda-Fort Bend Counties			
19. Betts, Floyd G., Jr.	A	Wharton	
20. Daily, Herschel	A	Richmond	
21. Rothenberg, Lionel H.	A	Wharton	

†A=Army; N=Navy; U=U. S. Public Health Service.

*EDITOR'S NOTE: This list is the nineteenth of a series naming physicians who have been in the Armed Forces during the war recently passed and who have now returned to Texas to resume civilian practice. The information in this list has been assembled from a variety of sources. While an attempt has been made to secure as complete and as accurate data as possible, we are aware that omissions and errors have been made. For the permanent records in the central office of the State Medical Association, we invite and urge correction of and addition to the material here submitted. Note that physicians from each county area are numbered consecutively following those listed in the August JOURNAL; the last number in each section therefore indicates the total physicians returned to that county area. The complete total for Texas named to date (August 25), including the accompanying list, is 2,203.

[1]Formerly of Mercedes.
[2]Formerly of Austin.
[1]Formerly of Ludlow, Mass.
[2]Formerly of Houston.
[3]Formerly of Lockhart.
[4]Formerly of Dallas.

HOUSTON PEDIATRICS CONFERENCE

A cooperative pediatrics conference will be held in Houston, October 13-18. Sponsoring agencies include the Department of Pediatrics of Baylor University College of Medicine, University of Texas Child Health Program, Houston Guidance Center of the Bureau of Mental Hygiene, M. D. Anderson Hospital for Cancer Research, Texas Medical Center, Maternal and Child Health Division of the Texas State Board of Health, and the Texas Pediatric Society.

Baylor University is especially responsible for the program of the first four days, while the Texas Pediatric Society is primarily concerned with the program for the last two days, which will constitute its annual meeting.

Dr. W. H. Moursund, dean of Baylor University College of Medicine, has announced that the enrollment of pediatricians attending the four-day conference at the expense of the State Health Department is limited to eighty, but that others who are interested may attend upon payment of a small tuition fee.

Heart disease, malignancies, neuropsychiatric disorders, and a variety of other problems of concern to physicians who examine and treat children will be considered in the first periods of the conference. Special guest speakers include Drs. Paul L. Boisvert, Yale University; Jules V. Coleman, University of Colorado; Harold W. Dargeon, Columbia University; Milton E. Kirkpatrick, Tulane University; Robert A. Lyon, University of Cincinnati; Russell J. Blattner, Baylor University; J. Warner Duckett, Southwestern Medical College; Arild E. Hansen, University of Texas; and Sumpter S. Arnim and Russell K. Smith, University of Texas School of Dentistry.

The Texas Pediatric Society will present Drs. Paul Bucy and Douglas Buchanan, University of Chicago, and Julian Boyd, University of Iowa, as its special guests.

Dr. J. H. Park, Jr., Baylor University College of Medicine, Houston, is chairman of the conference. Dr. J. R. Lemmon, Amarillo, president of the Texas Pediatric Society, is vice-chairman.

HOSPITAL PROGRAM PAMPHLETS

Five pamphlets explaining the Hill-Burton Hospital Survey and Construction Act have been issued

by the U. S. Public Health Service, Washington 25, D. C., and are available free upon request.

"The Hospital Survey and Construction Act" summarizes the law. "Why We Need More Hospitals" explains hospital needs in this country. "The Hospital Act and Your Community" relates the program to states and communities. "Hospital Quiz" gives questions and answers on hospital planning. "What Is a Hospital System" describes a coordinated hospital system.

AMERICAN UROLOGICAL ASSOCIATION SECTION TO MEET IN FORT WORTH

The South Central Section of the American Urological Association will meet at the Texas Hotel in Fort Worth, October 13-15. A scientific program will feature Dr. Lloyd Lewis, Washington, D. C.; Dr. Arthur Grollman, Dallas; and Dr. Sam Bacon, Los Angeles, as guest speakers. A clinical conference, the "Howard Hour," will be conducted by Dr. T. Leon Howard, Denver. Any reputable physician will be welcome at these scientific meetings.

Officers of the South Central Section include Dr. Harold T. Low, Pueblo, Colo., president; Dr. Neil S. Moore, St. Louis, vice-president; and Dr. W. J. McMartin, Omaha, Neb., secretary-treasurer. Dr. Herbert H. Howard, Boston, president of the American Urological Association; Dr. Charles Higgins, Cleveland, president-elect; and Dr. Charles McMartin, Omaha, Neb., a past president, will also be present.

Members of the local arrangements committee are Drs. Frank Schoonover, general chairman; W. W. Wood, registration; A. K. Doss, scientific exhibits and golf; Hub Isaacks, entertainment; S. J. R. Murchison, commercial exhibits; and Robert S. Mallard, transportation.

A business session; a cocktail party, dinner, and ball honoring the president; luncheons; and a golf tournament have been scheduled. The Fort Worth members of the association will entertain visiting members of the association and their wives with a cocktail party and buffet dinner the evening of October 12.

A social program is being arranged for visiting women by a committee composed of Mesdames Hub Isaacks, chairman; A. K. Doss, S. J. R. Murchison, Frank Schoonover, and W. W. Wood.

MEDICAL PUBLICATIONS NEEDED OVERSEAS

Doctors throughout Europe have been deprived for more than ten years of news of the latest developments in medicine. Physicians in this country can help by sending textbooks, journals, charts, and reprints to the SOS (Supplies for Overseas Survivors) Collection of the Joint Distribution Committee, 1539 Troy Avenue, Vanderveer Park, Brooklyn, N. Y. The literature will be placed in a library in a D.P. camp, child care center, hospital, or school for use by professionals.

LIBRARY NOTES

PACKAGE SERVICE

The package library consists of collections of reprints and other periodical material on various subjects, prepared for lending to members of the Association. Requests for packages should be addressed "Library, State Medical Association of Texas, 1404 W. El Paso Street, Fort Worth 3, Texas." Twenty-five cents in stamps should be enclosed with the request to cover postage and part of the expense of collecting the material. Packages are allowed to remain in the hands of the borrower for 14 days.

ACCESSIONS

The following additions were made to the Library during August:

Reprints received, 1,309.
Journals received, 230.

Springfield, Charles C. Thomas, Publisher—Venable and Stuck: The Internal Fixation of Fractures.

Cincinnati, The Hebrew Union College Press—Marcus: Communal Sick-Care in the German Ghetto.

Baltimore, Williams & Wilkins—Perera: May's Diseases of the Eye.

Chicago, American Medical Association—Council on Pharmacy and Chemistry Reports.

Philadelphia, J. B. Lippincott—New and Nonofficial Remedies.

SUMMARY OF SERVICE

Local users, 60.	Borrowers by mail, 33.
Items consulted, 253.	Packages mailed, 35.
Items taken out, 331.	Items mailed, 242.

Total number of articles consulted and loaned, 825.

MOTION PICTURE FILM LIBRARY

Motion picture films on medical subjects, 16 mm., both silent and sound, some in color, and suitable for either medical or lay audiences, are available for loan to county medical societies, hospital staffs, or individual physicians, on request. Borrowers will be required to pay only the cost of shipment of the films, by express, with insurance, and for any damage to films while in the hands of the borrower.

Requests for films should be addressed to "Motion Picture Film Library, State Medical Association of Texas, 1404 West El Paso Street, Fort Worth 3, Texas." A list of available films, with descriptions, will be furnished on request.

The following motion picture films were loaned by the Film Library of the State Medical Association of Texas during August:

Accent on Use (Available through the courtesy of the National Foundation for Infantile Paralysis, New York)—Texas Elks' Crippled Children's Institution, Ottine.

Adolescence, Introduction to (Available through the courtesy of Mead Johnson & Company, Evansville, Ind.)—Rollins-Brook Hospital Staff, Lampasas.

Aids in Muscle Training (Purchased by the Film Library, State Medical Association of Texas)—Dr. C. C. McDonald, Tyler.

Anemia, Erythroblastic (Available through the courtesy of Mead Johnson & Company, Evansville, Ind.)—Interns and Residents, Scott and White Clinic, Temple.

Anesthesia, Regional (Available through the courtesy of Winthrop Chemical Company, New York)—Dr. J. W. Lanius, Dallas; Drs. Mathews, Galt and Taylor, Dallas; and Dr. C. C. McDonald, Tyler.

Breech Extraction (Available through the courtesy of Mead Johnson & Company, Evansville, Ind.)—Alexander Clinic, Spur.

Bronchial Asthma (Available through the courtesy of E. Fougera & Company, Inc., New York)—Scott and White Clinic, Temple.

Chest Diseases, Surgery in (Available through the courtesy of British Information Services, Houston)—Dr. R. S. Lander, Victoria.

Convalescent Care and Rehabilitation of Patients with Spinal Injuries (Available through the courtesy of the War Department, Washington)—Dr. George Ehni, Temple.

D. D. T., The Story of (Available through the courtesy of British Information Services, Houston)—Rotary Club, Lufkin; Dr. R. S. Lander, Victoria; and Joint Meeting of the Medical Society and Nursing Association, Cleburne.

Extracellular Fluid (Available through the courtesy of Mead Johnson & Company, Evansville, Ind.)—Rollins-Brook Hospital Staff, Lampasas.

Immunization Against Infectious Diseases (Available through the courtesy of Lederle Laboratories, Inc., New York)—Lamar College, Beaumont.

Infantile Paralysis, Orthopedic Treatment (Available through the courtesy of Mead Johnson & Company, Evansville, Ind.)—Texas Elks' Crippled Children's Institution, Ottine.

Infantile Paralysis, Your Fight Against (Available through the courtesy of the National Foundation for Infantile Paralysis, New York)—Lions Club, Lampasas, and Dr. R. W. Taylor, Lufkin.

Know for Sure (Available through the courtesy of the Texas State Board of Health, Austin)—Rotary Club, Carthage.

Neurosurgery in an Overseas General Hospital (Available through the courtesy of the War Department, Washington)—Scott and White Clinic, Temple.

Normal Delivery (Available through the courtesy of Mead Johnson & Company, Evansville, Ind.)—Alexander Clinic, Spur.

Plain Facts (Available through the courtesy of the American Social Hygiene Association, New York)—Rotary Club, Carthage.

Preventive Medical Program for Children (Available through the courtesy of Mead Johnson & Company, Evansville, Ind.)—Rollins-Brook Hospital Clinic, Lampasas.

Report to the People (Available through the courtesy of the National Foundation for Infantile Paralysis, New York)—Lions Club, Lampasas, and Texas Elks' Crippled Children's Institution, Ottine.

Uterosalpingography (Available through the courtesy of E. Fougera & Company, Inc., New York)—Scott and White Clinic, Temple; Drs. Mathews, Galt and Taylor, Dallas; and Dr. J. W. Lanius, Dallas.

Human Fertility (Available through the courtesy of Ortho Products, Inc., Raritan, N. J.)—Dr. J. W. Lanius, Dallas.

NEW MOTION PICTURE FOR THE FILM LIBRARY

The Motion Picture Film Library of the State Medical Association has received the following film, which is available for loan upon request:

MS 2045. *A Stitch in Time.* 16 mm., sound, showing time, 25 minutes. (Available through the courtesy of the American Medical Association, Chicago.) This film was sponsored by the Sears-Roebuck Foundation and endorsed by the National Safety Council. It is designed to make the American farm a safer place to work and live. It brings out vividly the peacefulness and beauty of the countryside and then awakens one to the many hazards that are lurking unseen in all this serenity. The picture stresses the importance of self protection through education and preventive methods. Farmers are not more careless than other people, but from pioneer days they learned to be fearless and courageous, and perhaps take more chances that easily could be avoided. This film is highly recommended for showing before all rural groups as an educational project in extending better health to rural communities.

LIBRARY NEEDS

The journals listed are needed by the Library of the State Medical Association to complete volumes for binding. Any of these numbers will be acceptable either as a gift or for purchase. It is preferable that the Library, 1404 West El Paso Street, Fort Worth 3, be notified regarding items available, and the prices of such items, if any, before shipment is made.

Journals needed by the Library of the State Medical Association are as follows:

American Journal of Obstetrics and Gynecology, Vol. 34, No. 4 (Oct.) 1937.

Annals of Internal Medicine, Vol. 25, No. 1 (July) 1946.

Archives of Internal Medicine, Vol. 60, No. 1 (July) 1937.

Archives of Ophthalmology, Vol. 18, No. 1 (July) 1937.

Bulletin of the Tarrant County Medical Society, Vol. 10, Nos. 9, 10, 11, 12 (Dec., Jan., Feb., Mar.) 1937-1938.

Canadian Medical Association Journal, Vol. 37, No. 6 (Dec.) 1937.

Journal of Laboratory and Clinical Medicine, Vol. 26, No. 1 (Oct.) 1940; Vol. 27, No. 5 (Feb.) 1942; Vol. 28, No. 14 (Nov.) 1943.

Pennsylvania Medical Journal, Vol. 40, No. 11 (Aug.) 1937.

Proceedings of the Royal Society of Medicine, Vol. 30, No. 5 (March) 1937.

Proceedings of the Staff Meetings of the Mayo Clinic, Vol. 12, No. 45, (Nov. 10) 1937; Vol. 13, Nos. 4, 6 (Jan. 26, Feb. 9) 1938; Vol. 14, Nos. 23, 26, 29, 32 (June 7, 28, July 19, Aug. 9) 1939; Vol. 15, Nos. 5, 8, 15, 16, 24 (Jan. 31, Feb. 21, April 10, 17, June 12) 1940; Vol. 17, Nos. 18, 27, 28, 30, 32, 33, 38 (May 6, July 8, 15, Sept. 2, 16, 23, Dec. 9) 1942; Vol. 18, Nos. 4, 8, 9, 16, 17, 18 (Feb. 24, April 21, May 5, Aug. 11, 25, Sept. 8) 1943; Vol. 19, No. 8 (April 19) 1944.

Public Health Reports, Vol. 52, Part I, No. 21 (May 21) 1937.

Southern Medical Journal, Vol. 35, No. 4 (April) 1942; Vol. 39, Nos. 10, 12 (Oct., Dec.) 1946.

Southwestern Medicine, Vol. 21, No. 9 (Sept.) 1937.

BOOK REVIEWS

[1]**Victory over Pain.** A History of Anesthesia. By Victor Robinson, M. D. Cloth, 338 pages. Price, $3.50. New York, Henry Schuman, 1946.

An excellent book published to commemorate the centennial of clinical anesthesia, this chronology of anesthesia is based on documentary fact. It is written in an interesting manner which includes the more personal thoughts and ideas that were part of the lives of the various men who have contributed toward America's greatest gift to mankind—anesthesia.

[2]**Principles in Roentgen Study of the Chest.** By William Snow, M. D., Director of Radiology, Bronx Hospital. Fabrikoid, 414 pages. Price, $10.00. Springfield, Illinois, Charles C. Thomas, Publisher, 1946.

The author, in this excellent book, presents a detailed analysis of the finer points of the roentgenologic diagnosis of pulmonary disease. He emphasizes the advantages of attempting to make the diagnosis of various pathologic conditions by study of the detailed picture presented by the individual roentgenogram, rather than trying to make the diagnosis by memory of a typical "shadow picture."

The first chapter of the book considers the influence of technique on various shadows in the chest roentgenogram and discusses the normal lung. The major pulmonary diseases are then discussed in detail under eighteen chapter headings. Chapters on the thoracic cage and the circulatory system are also included.

The author calls upon his own experience to a great extent and some of his explanations of the mechanisms producing certain roentgenographic appearances may be open to question. However, in general this is a very instructive book, not only for the radiologist and chest specialist, but also for any physician whose practice demands interpretations of chest films.

As is typical in most American textbooks, the reproduction of the roentgenograms is poor.

[3]**Penicillin in Syphilis.** By Joseph Earle Moore, M. D., Associate Professor of Medicine and Adjunct Professor of Public Health Administra-

[1]Reviewed by H. C. Slocum, M. D., Department of Anesthesiology, University of Texas, Medical Branch, Galveston.
[2]Reviewed by L. M. Garrett, M. D., Corpus Christi.
[3]Reviewed by Arthur G. Schoch, M. D., Dallas.

tion, The Johns Hopkins University. Cloth, 319 pages. Price, $5.00. Springfield, Illinois, Charles C. Thomas, Publisher, 1946.

It is generally known that the treatment of syphilis has been revolutionized by the advent of penicillin. Developments in this specific treatment have evolved at such a rapid rate since November, 1943, that the investigators themselves have had to resort to the "grapevine route" of communication to keep abreast of what constitutes inadequate treatment, adequate treatment, and unorthodox and worthless treatment with respect to penicillin and its use in the treatment of syphilis, both early and late.

Dr. Moore's book presents clearly, concisely, and accurately almost all that has been learned in a cooperative study dedicated to this end, namely, what is adequate treatment for early syphilis and what is effective treatment in late syphilis, using penicillin.

Each practitioner of medicine should read this volume from cover to cover if and before he attempts to treat syphilis with penicillin. Until this time many variants of standard schedules have been adopted by the practitioner. From this date there is no excuse for the patient with early or late syphilis to be subjected to individualistic and unorthodox treatment schedules.

Syphilis has for many years been a diagnostic problem with most practitioners, specialists and others. This particular book adds little or nothing to the diagnostic phase of the disease. It deals purely with penicillin treatment. Syphilis as a disease still demands a careful history and especially careful physical examination, and accurate laboratory confirmation before treatment is instituted. If these be done, the answer to treatment can be found in Moore's new book.

[1]**Penicillin, Its Practical Application.** Under the General Editorship of Professor Sir Alexander Fleming, M. B., B. S., F. R. C. P., F. R. C. S., F. R. S., Professor of Bacteriology in the University of London, St. Mary's Hospital, London. Cloth, 380 pages. Price, $7.00. Philadelphia, The Blakiston Company, 1946.

Of distinct and permanent value to the library of any physician is the record in book form of the development and application of a truly notable discovery. Certainly the facts which Sir Alexander Fleming was urged by the publisher to write and edit are a glowing example of this idea. Fleming recognized the implications of the marked antibacterial activity of the mould and his first chapter relates in an interesting and inspiring, though modest, manner, the development of penicillin.

The first portion of the treatise, written by distinguished workers in the field, consists of five chapters of general aspects. These deal with dissertations concerning the chemistry, manufacture, pharmacy, pharmacology, and methods of administering penicillin. Fleming himself wrote another dealing with bacteriologic control by penicillin therapy. The developments for the chemical identification of the various kinds of penicillin are presented concisely and the physician will be enthralled in the discussion of its manufacture on a large scale. Important factual information is presented in the chapters on pharmacy and pharmacology. They are valuable for reference purposes and doubly valuable for familiarization with details of various physiologic factors. In the chapter on bacteriologic control Fleming presents quite complete data on developments and assaying methods for various tissues and excreta. Data presented in the chapter, "Methods of Administration," are excellent and are summarized in a readily referable manner.

The greater portion of the book is devoted to a consideration of the various clinical features and consists of twenty chapters by different authors. Inasmuch as there are thirty authors for the diversified chapters in this book, the reviewer has chosen not to mention any one individual. As may be expected, a larger amount of the clinical experience has been with war problems; hence chapters deal with such subjects as wounds and gas gangrene, burns, plastic surgery, and chest surgery. Reference is made also to wartime experiences in general and special types of infections including consideration of prophylaxis.

There are chapters of interest to specialists in almost every branch of surgery and medicine with separate chapters on hand infection, abdominal infection, and sepsis of the newborn. Specific mention is made of dental and oral infections which should make this book of interest to the dental profession. A twelve page chapter, "Penicillin and Animal Diseases," should benefit the veterinarian. The last chapter, entitled "Penicillin and the General Practitioner," is a short discussion of penicillin treatment, but the usual admonition is made that in spite of the miraculous action of this drug, it is not a panacea. Briefly, the information from a practical viewpoint and a summary of the special conditions and indications of its use and dosage are presented.

This series of review papers by many accomplished physicians and scientists, including Sir Alexander Fleming, is a highly desirable book for the libraries of all physicians for handy and special reference.

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1946. Cloth, 135 pages. Price, postpaid, $1.00. Chicago, American Medical Association, 1947.

This volume was formerly of most interest to those who wished to know why the Council on Pharmacy and Chemistry had not accepted certain of the preparations it had considered. The reports were mainly those of rejection; though, through the years, the educational nature of the Council's work was attested by status reports on drugs, or therapeutic procedures, or preliminary reports on agents showing promise of usefulness but not yet ready for adoption by the general and medical profession. In recent years, the tendency has been toward a preponderance of the educational type of report. In the present volume, both the condemnatory and the educational phases of the Council's work are represented. There are three reports of vigorous condemnation: (1) the report on Cabasil, a curiously unscientific mixture whose exploitation for use in a multitude of diseases is aptly summarized by the subtitle of the report, "Quackery Unlimited"; (2) the report on the pseudo-scientific ethylene disulphonate (Allergosil brand), a preparation of highly uncertain nature, exploited to physicians for use in allergic conditions; (3) Formula A-N-1, a joint report of the Council on Pharmacy and Chemistry and the Council on Industrial Health, concerning an expensive but poor substitute for aspirin and citrate of magnesia, cleverly promoted to industrial concerns for use in reducing absenteeism due to colds.

Among the status reports, the excellent article of Dr. Samuel M. Feinberg, "Histamine and Antihistaminic Agents," is probably most worthy of mention. Since its appearance, the Council has accepted for inclusion in "New and Nonofficial Rem-

[1]Reviewed by Arild E. Hansen, M. D., Chairman, Department of Pediatrics, University of Texas School of Medicine, Galveston.

edies" the two new agents of this class evaluated in the article, diphenhydramine hydrochloride, and tripelennamine hydrochloride (benadryl hydrochloride and pyribenzamine hydrochloride, respectively).

Pharmaceutical and scientific investigators, alike, will be interested in the informative report on the Council's new Therapeutic Trials Committee. Of special interest to manufacturers is a statement on the revised rules of the Council, though this exposition of the trends of Council policy is of concern to all who are interested in progressive rational therapeutics.

Attention is called to the several reports on the adoption of generic designations for drugs proposed or marketed under protected names. Not all such actions of the Council have been the subject of separate published reports; the recognized terms have appeared in the published descriptions of the drugs when accepted, and will be inserted in another Council publication, "New and Nonofficial Remedies," as adoption of such designations for already accepted protected names proceeds.

New and Nonofficial Remedies, 1947, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1947. Cloth, 749 pages. Price, postpaid, $3.00. Philadelphia, J. B. Lippincott Co., 1947.

Although the latest edition of "New and Nonofficial Remedies" has some eleven pages fewer than the 1946 book, its increase in size, due to the heavier paper used, and its change of color—dark green to bright red—combine to make a striking contrast with the earlier annual volumes. The book is now published by J. B. Lippincott and Company, though it is still issued under the direction and supervision of the Council on Pharmacy and Chemistry. Another innovation is the relegation of the statements of tests and standards to the back of the book, which makes the text more convenient and usable for the physician, for whom it is primarily intended. It is understood that supplements to the annual volumes will no longer be issued. The physician who is interested in current acceptances can keep track of these as the descriptions are published in *The Journal of the A.M.A.*, or may inquire about them by addressing the Council's office at A.M.A. headquarters. Several medical and pharmaceutical journals now carry lists of currently accepted products.

There appears to be no very extensive revision in the various general articles or chapter head discussions, although several new monographs have made their appearance and others have been revised to reflect current medical opinion. There is a new chapter, "Unclassified Therapeutic Agents," which includes the monographs on gold compounds and iodine compounds for systemic use. This is in line with the policy adopted some years ago of classifying accepted preparations according to pharmacologic action and therapeutic use.

Attention is called to the amplification and indexing of the section devoted to the statement of the Council's rules. This should be of great assistance to manufacturers in the presentation of products for Council consideration and is no doubt inspired by the recent marked increase in the number of pharmaceutical concerns asking Council recognition.

The descriptions of some thirteen new preparations appear in this volume. This excludes, of course, brands or dosages of already accepted agents. Among those preparations noteworthy of mention are the pertussis vaccines and vaccines representing combinations of pertussis with diphtheria and tetanus organisms; the new histamine-antagonizing agent, benadryl hydrochloride elixir (diphenhydramine hydrochloride elixir); furacin (nitrofurazone) a new topical anti-infective agent; streptomycin; heparin sodium; parenamine, a new casein hydrolysate; thiouracil, an antithyroid agent; naphuride sodium (suramin sodium) a new trypanocide; and tuamine (racemic 2-aminoheptane), a new vasoconstrictor. There is an increasing use of generic designations in conformance with the revised Council's rules on acceptance of agents bearing protected or trademarked names.

"New and Nonofficial Remedies" remains a most valuable and authoritative compendium of modern rational therapeutics. With successive editions, it becomes more useful and accessible to the physician and to all those interested in the use, preparation, or manufacture of drugs.

NEWS

Contributions to this department will be appreciated. News should be of general medical interest, such as public health activities, new hospitals, personal items of more than local value, etc. News for a particular number of the JOURNAL should be in the hands of the Editor not later than the fifteenth of the preceding month.

A Veterans Administration Medical Research and Laboratory Center to serve Texas, Louisiana, and Mississippi has been set up in Dallas with Dr. Jacob Furth, formerly professor of pathology at Cornell University, as director, according to the Haskell *Free Press*. Dr. Furth will also be associated with Southwestern Medical College. The laboratory will provide technical service to Veterans Administration hospitals and will serve as a research and training center for Veterans Administration professional personnel in the region.

The Bowie-Miller Medical Societies' Tumor Clinic in Texarkana has become a reality with the contribution of $3,600 from the Texas Division of the American Cancer Society, according to the Texarkana *Gazette*. Local doctors will contribute their time to the care and treatment of indigent cancer patients. The only paid employees will be a medical-social worker and a part-time secretary.

A Postgraduate Clinic at Hendrick Memorial Hospital, Abilene, on July 8 was attended by approximately sixty physicians and surgeons, informs the Abilene *Reporter-News*. Special guest speakers were Dr. James A. Greene, professor of medicine, and Dr. Herbert Poyner, professor of surgery, both of Baylor University College of Medicine, Houston. Abilene physicians who read papers include Drs. J. P. Gibson, L. J. Pickard, Erle D. Sellers, W. B. Adamson, R. W. Varner, D. G. Strole, Floyd D. Taylor, and Guy L. Pattillo. A round-table discussion was held at luncheon, and the hospital staff was host in the evening for an entertainment at the Abilene Country Club.

Another Medical Center for Fort Worth will be built during 1948 by a group of developers headed by Mr. Bryan Hanks, reports the Fort Worth *Press*. Plans call for a clinical center with drug stores, medical supply stores, offices, and parking space to cover an entire block at the corner of Pennsylvania and Summit Avenues and to cost several million dollars. There will be no hospital facilities.

A San Angelo Medical Arts Building is being planned by Mr. A. H. Hamner, San Angelo contractor, and Mr. John Pundt, Dallas oil man. Construction of the twenty-story building is expected to be under way by the end of the year, reports the San Angelo *Standard-Times*. Estimated cost of the new structure will be $1,500,000. In addition to space on the ground floor for stores and a garage, the building will contain storage space for cars, offices for doctors and dentists, a 200-bed hospital with operat-

ing room, and laboratories. The building will be completely air conditioned.

The Texas Medical Center has recently announced the election of three associate members to its board of trustees and the organization of an advisory committee. The Houston *Chronicle* reports that Mayor Oscar Holcombe, County Judge Glenn A. Perry, and C. E. Naylor, president of the Houston Chamber of Commerce, have accepted associate membership on the board, which has previously been composed only of fourteen full trustees.

The new advisory committee includes Dr. W. H. Moursund, dean of Baylor University School of Medicine; Dr. Frederick C. Elliott, dean of the University of Texas School of Dentistry; Dr. R. Lee Clark, director of the M. D. Anderson Hospital for Cancer Research; and a representative chosen by and serving for the Harris County Medical Society, the Houston District Dental Society, the Houston Academy of Medicine, St. Luke's Episcopal Hospital, Methodist Hospital, Hermann Hospital, and the proposed Children's Hospital and Research Institute. Each member will represent units to be located in the Texas Medical Center. Dr. E. W. Bertner, president of the center, states that any units subsequently joining the project will be asked to elect a representative to the committee.

The University of Texas Medical Branch has received a grant of $10,000 from the American Cancer Society for the support of research on the growth of cancer cells under the direction of Dr. C. M. Pomerat.

Recent promotions in the staff of the University have been announced by Chauncey D. Leake, Ph. D., vice-president and dean. The faculty members concerned, with their new positions, are as follows: Dr. C. R. Allen, associate professor of anesthesiology; Dr. A. A. Ormsby, associate professor of biological chemistry; Dr. Howard G. Swann, associate professor of physiology; Dr. Robert M. Moore, professor of surgery and chairman of the department; and T. G. Blocker, Jr., professor of plastic and maxillofacial surgery and director of the Postgraduate Training Program.

Recent appointees include Drs. F. J. L. Blasingame, Wharton, lecturer in anatomy; J. W. Middleton, assistant professor of internal medicine and director of the Student Health Service; Gaynelle Robertson, lecturer in ophthalmology; C. C. Grulee, Jr., assistant professor of pediatrics and resident director of the Stewart Home for Convalescent Children; C. A. Handley, lecturer in pharmacology and toxicology; Marshall Brucer, assistant professor of physiology; C. E. Dernehl, assistant professor of industrial hygiene; A. W. Harrison, assistant professor of thoracic surgery; Albert O. Singleton, Jr., assistant professor of surgery; and R. H. Rigdon, professor of experimental pathology and director of the Laboratory of Experimental Pathology.

Dr. E. L. Porter, professor of physiology at the University of Texas Medical Branch, is spending several months with Dr. H. S. Liddell, professor of psychology at Cornell University, Ithaca, N. Y., to continue joint studies on chronic experimental neuroses in animals.

Personals

Dr. Charles L. Martin, Dallas, was elected vice-president of the American College of Radiology at its meeting in Atlantic City, June 8, the college reports.

Dr. J. B. McKnight, Sanatorium; *Dr. William Thomas*, Mexia; *Dr. Bruce Allison*, Abilene; and *Dr. C. W. Castner*, Austin, were among a group recently presented with certificates for more than thirty years of state service, according to the San Angelo *Standard*. Special ceremonies in Austin marked the occasion, and Acting Governor Allan Shivers presented certificates to the veteran staff members who were able to attend. The physicians named are on the medical staffs of state hospitals and schools.

Dr. W. J. Fontaine, Jones Prairie, was honored on his seventy-second birthday, August 1, by a surprise party at his home, attended by friends in the community who have been served by the physician for many years, reports the Cameron *Enterprise*. Contributions from his friends provided for a lounge chair and money for a tailored suit for Dr. Fontaine and a table lamp for his wife.

Marriages

Dr. George H. Petta married Miss Louise Davis, Fort Worth, on July 19.

Birth

To *Dr. and Mrs. F. J. L. Blasingame*, Wharton, a son, James Edward, August 12.

SOCIETY NEWS

Colorado-Fayette Counties Society

June 24, 1947

(Reported by C. I. Shult, Secretary)

The View the Medical Organization Takes in Relation to State Medicine—F. J. L. Blasingame, Wharton.

F. J. L. Blasingame, Trustee of the State Medical Association, was the featured speaker at a dinner meeting of the Colorado-Fayette Counties Medical Society and Auxiliary at Columbus, June 24. Newspaper editors of the two counties were guests.

July 29, 1947

(Reported by C. I. Shult, Secretary)

Rh Factor in Relation to Medical Practice (lantern slides)—Albert H. Braden, Houston.

Members of the Colorado-Fayette Counties Medical Society and Auxiliary met for dinner July 29 at Eagle Lake. The society heard a scientific paper presented by Albert H. Braden, Houston, in a program directed by J. C. Laughlin, Eagle Lake. A general discussion followed the paper.

Lubbock-Crosby Counties Society

July 1, 1947

(Reported by O. R. Hand, Secretary)

Modern Trend in Treatment of Heart Diseases—W. H. Gordon, Lubbock.

Discussion—Sam C. Arnett, Doyce Clark, and Allen T. Stewart, Lubbock.

Twenty-seven members and one visitor of Lubbock-Crosby County Medical Society met in Lubbock on July 1 to hear a paper on heart disease. W. H. Gordon outlined the classes of heart disease, the therapeutic agents of value in each condition, and the place of surgery in their treatment.

A. G. Barsh discussed the Hill-Burton Hospital Construction Law. Upon his motion the society voted unanimously to endorse the nomination of Allen T. Stewart, Lubbock, for a position on the State Hospital Advisory Committee.

A committee report on the standardization of communicable disease regulations was read by J. B. Rountree. The report was accepted by the society, which directed that a copy be sent to each member. Dr. Gordon reported that nothing further had been done to procure a tuberculosis hospital.

August 5, 1947

(Reported by O. R. Hand, Secretary)

Diagnosis of Common Allergies—V. E. Friedewald, Big Spring.
Common Lesions of the Nasopharynx—P. W. Malone, Big Spring.

Thirty-three members and eight visitors of the Lubbock-Crosby Counties Medical Society met August 5 in Lubbock with the president, Pauline Miller, Lubbock, presiding.

The scientific program outlined was presented. V. E. Friedewald, Big Spring, mentioned differential diagnosis of bronchial asthma, seasonal hay fever,

perennial hay fever, gastro-intestinal allergy, allergic and migraine headaches, urticaria, angioneurotic edema, atopic dermatitis, and contact dermatitis, and stressed the difficulty of and need for learning the cause of each condition. P. W. Malone, Big Spring, discussed tuberculosis, malignancy, and the presence of excessive lymphoid tissue in the nasopharynx, and considered the use of radium and roentgen ray in the treatment of the excessive lymphoid tissue. The papers were discussed by B. A. Jenkins, F. B. Malone, R. T. Canon, J. T. Hutchinson, and A. G. Barsh, all of Lubbock.

At the request by letter of H. H. Latson, Amarillo, councilor of District 3, the president appointed a cancer committee, to consist of J. T. Krueger, Olan Key, and Sam G. Dunn, all of Lubbock. Dr. Miller stated that cancer clinics are to be set up in Amarillo, Wichita Falls, San Angelo, and perhaps Lubbock. Allen Stewart and E. Loveless discussed the matter.

A letter from Charles J. Koerth, Kerrville, representing the American College of Chest Physicians, which requested appointment of a county tuberculosis committee was read.

Olan Key was appointed civilian coordinator for the Veterans Administration.

James V. McKay, Morton, discussed the Cochran County Cooperative Hospital. Dr. Stewart and O. W. Still, Littlefield, also entered the discussion.

Upon motion by Dr. Barsh, the society voted to assess each member $10 to cover expenses incidental to the fall meeting of the Panhandle District Medical Society, to be held in Lubbock. Dr. Miller appointed committees to serve for the meeting as follows: arrangements, Emerson M. Blake, Clarence Mast, and D. D. Cross; entertainment, A. G. Barsh, John D. Rountree, Mina D. Watkins, and Sam C. Arnett; registration, Ben B. Hutchinson and Allen T. Stewart.

Pecos-Jeff Davis-Presidio-Brewster Counties Society

July 6, 1947

(Reported by W. E. Lockhart, Secretary)

Common Problems of Orthopedic Surgery (lantern slides)—Louis W. Breck, El Paso.
Plastic Surgery (lantern slides)—Willard W. Schuessler, El Paso.

Seven members and eleven guests were present for the July 6 meeting of Pecos-Jeff Davis-Presidio-Brewster Counties Medical Societies at Alpine. The program indicated was presented by guests from El Paso.

August 3, 1947

(Reported by W. E. Lockhart, Secretary)

Differential Diagnosis of Chest Pain—Victor E. Schulze, San Angelo.
Amebiasis (motion picture)—Courtesy of Eli Lilly Co.

Pecos-Jeff Davis-Presidio-Brewster Counties Medical Society met August 3 in Fort Stockton with seven members and eleven guests present. The program outlined was presented.

Upon motion by J. W. O'Donnell, seconded by Louis M. Cartall, Jr., the society approved the series of radio transcriptions issued by the American Medical Association and distributed through the State Medical Association, and directed the secretary to write a letter to the officials of Radio Station KVLF, Alpine, expressing appreciation to them for broadcasting the transcriptions on a sustaining basis.

The society voted, upon motion by W. E. Lockhart, Alpine, seconded by C. E. Oswalt, Fort Stockton, to approve a student health service for Sul Ross College, Alpine, so long as it adheres to the following principles: "(1) All funds collected as student health fees be expended for the purpose of student health. (2) The student be given his choice of physicians among the available and interested licensed doctors of medicine practicing in Alpine. (3) An adequate service be rendered in proportion to the health fee collected. (4) The doctors be adequately remunerated in proportion to the service rendered."

Randall-Deaf Smith-Parmer-Castro-Oldham Counties Society

July 2, 1947

(Reported by Robert P. Jarrett, Secretary)

Members of Randall-Deaf Smith-Parmer-Castro-Oldham Counties Medical Society met at the home of Dr. Robert C. Stokes, Friona, July 2 to see a motion picture illustrating the action of some of the most common vitamins on body metabolism. Mrs. Stokes served a buffet supper.

August 6, 1947

Reported by Robert P. Jarrett, Secretary)

Diseases of the Breast—Ozro T. Woods, Dallas.

Eleven members of Randall-Deaf Smith-Parmer-Castro-Oldham Counties Medical Society heard a paper on diseases of the breast by Ozro T. Woods, Dallas, on August 6 at Dimmitt. A short business meeting was held, and refreshments were served.

Second District Society

July 26, 1947

(Reported by R. B. G. Cowper, President)

A reorganization meeting of the Second District Medical Society, inactive since before the war, was held July 26 at Sweetwater at the call of A. H. Fortner, Sweetwater, district councilor. G. V. Brindley, Temple, chairman of the Board of Councilors of the State Medical Association, discussed the possibility of liquidating the district and merging its counties with adjoining districts, but the physicians in attendance agreed to reorganize, and elected the following officers: R. B. G. Cowper, Big Spring, president; C. U. Callan, Rotan, vice-president; H. A. Briggs, Midland, secretary-treasurer. The officers and Dr. Fortner, acting as an executive committee, were directed to plan a fall scientific meeting.

Chief speaker for the organization meeting was B. E. Pickett, Sr., Carrizo Springs, president of the State Medical Association, who urged a more militant public relations program for the medical profession. Also present was H. H. Latson, Amarillo, councilor of District 3.

The Board of City Development of Sweetwater entertained the society with a barbecue.

AUXILIARY NOTES

Officers of the Woman's Auxiliary to the State Medical Association of Texas: President, Mrs. Edward C. Ferguson, Beaumont; President-Elect, Mrs. S. M. Hill, Dallas; First Vice-President, Mrs. A. N. Boyd, Houston; Second Vice-President, Mrs. H. P. Ledford, Wichita Falls; Third Vice-President, Mrs. A. L. Delaney, Liberty; Fourth Vice-President, Mrs. W. Frank Armstrong, Fort Worth; Recording Secretary, Mrs. M. A. Ramsdell, San Antonio; Publicity Secretary, Mrs. J. F. Campbell, Fort Worth; Treasurer, Mrs. J. Guy Jones, Dallas; Parliamentarian, Mrs. Paul Brindley, Galveston.

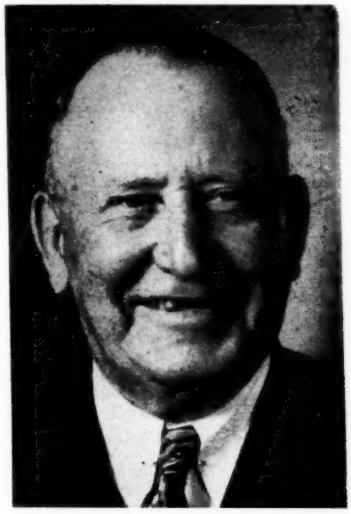
AUXILIARY NEWS

Cass-Marion Counties Auxiliary met in Hughes Springs, July 9, with nine members present. After supper at a cafe at which Hughes Springs physicians were hosts, the auxiliary met in the home of Mrs. A. E. Starnes, the president, who outlined plans for the year. Mrs. Jessie DeWare, Jefferson, was elected reporter, and Mrs. Ernest Grumbles, Atlanta, was appointed public relations chairman, and Mrs. W. H. Terry, Jefferson, program chairman. The auxiliary was organized in May, at which time Mrs. Starnes was elected president and Mrs. James Campbell, Linden, was elected secretary and treasurer.—Mrs. Joe D. Nichols, Fifteenth District Council Woman.

DEATHS

Dr. Thompson Ray Butts, Annona, Texas, died July 18, 1947, in Paris, following a brief illness.

Dr. Butts, son of Turner and Adeline (Johnson) Butts, was born in Dublin, Ark., on November 27, 1874.



DR. T. R. BUTTS

As a young man, Dr. Butts taught school for several terms. He then entered the University of Arkansas to study medicine. In 1900 he moved to Texas to practice. He spent a short time in Dalby Springs, Bowie County; and Weaver, Hopkins County, before locating in Red River County, where he had been for many years. He practiced for some time in Boxelder before moving to Annona. Dr. Butts had done postgraduate work at Tulane University, New Orleans.

At intervals during his career Dr. Butts was a member of the State Medical Association and the American Medical Association through Red River County Medical Society. From 1941 until the time of his death he held continuous membership in the organizations named, and from 1942 through 1945 he was president of the Red River County Society. He was county health officer at the time of his death, and was on the staff of Red River County Hospital, Clarksville. He was a member of the Methodist Church and the Masonic Order.

Survivors include four sons, T. C. Butts, DeKalb; Blaine Butts, Wichita Falls; Howell Butts and Paul Butts, Annona; two daughters, Mrs. Tommy McDaniel, Sanger, and Mrs. Marion A. Lawson, Clarksville; one sister, Mrs. Miles McDermont, Houston; and nine grandchildren.

Dr. Joseph John Hinchman, Albany, Texas, died July 14, 1947, in Brady.

Dr. Hinchman, born May 20, 1867, in Lynville, Iowa, attended Penn College, Oskaloosa, Iowa, and was graduated in medicine from the State University of Iowa, Iowa City, in 1893. He practiced for more than twenty years in Iowa, and then moved to Texas, where he was in practice in Albany most of the time from 1929 until a few weeks before his death, when he became ill.

For several years Dr. Hinchman was a member of the State Medical Association and American Medical Association through Stephens County Medical Society. He was a member of the Society of Friends.

In June, 1889, Dr. Hinchman married Miss Bertha L. Hoover, first cousin of former President Herbert Hoover, who died in September, 1896. From this union one daughter, Mrs. Ralph W. Branson, West Branch, Iowa, and one son, Dr. A. W. Hinchman, Brady, survive. Dr. Hinchman on July 27, 1903, married Miss Esther A. Whaley, of Belle Plain, Iowa, who survives. Their daughter, Mrs. Donna C. Hawley, Temple City, Calif., also survives.

Dr. Charles Fletcher Cron, died at his home in Rockport, Texas, July 5, 1947, of coronary thrombosis.

The son of Dr. John S. and Charlotte Matilda Cron, Dr. Cron, was born August 11, 1888, in Gladbrook, Iowa. He attended the public schools at Gladbrook, and Iowa State University, Iowa City, from which he received his doctor of medicine degree in 1910. After practicing for about two years near Mexico City, Dr. Cron returned to Iowa, where he was in practice in Long Grove, Exira, and Iowa Falls until 1929. He then moved to Texas, going to Rockport in 1933.

DR. CHARLES FLETCHER CRON

Since 1938 Dr. Cron had been a member of the State Medical Association and American Medical Association through San Patricio-Aransas-Refugio Counties Medical Society. He was president of the county society in 1945, and a member of its board of censors at the time of his death. He was also a member of the Southern Medical Association. For fourteen years Dr. Cron was health officer of Aransas County. He volunteered for service with the Army Medical Corps in World War I but was disqualified because of an eye defect. He served on the local selective service board during World War II. He was a member of the Methodist Church.

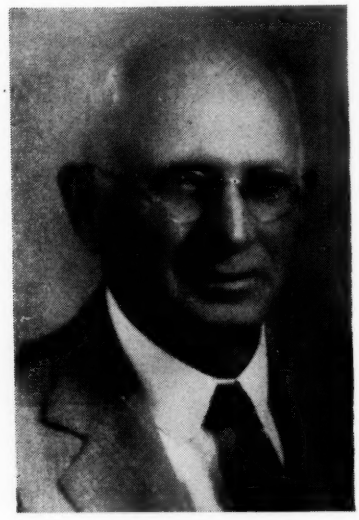
Dr. Cron married Miss Margaret Floy Mossman on January 8, 1928, in Iowa. He is survived by his wife; two daughters, Charlotte Ann Cron and Bonnie Lou Cron; and two sons, John S. Cron and Cyril Thomas Cron, all of Rockport; one brother, Dr. Cyril M. Cron, Miami, Ariz.; and two sisters, Mrs. G. S. Westly and Mrs. S. S. Westly, both of Manly, Iowa.

Dr. Lee Knight, Temple, Texas, died at his home July 6, 1947, of arteriosclerotic disease and interstitial nephritis.

Dr. Knight was born March 8, 1865, at Opelika, Ala., the son of William Meekin and Mattie Amelia Knight. He received his premedical education at Sam Houston Normal College, Huntsville, Texas, and Baylor University, Waco. He taught school at Bertram and Blooming Grove before entering the Physicians and Surgeons Medical College, Baltimore, from which he was graduated in 1895. He did intern work at the City and County Hospital, Baltimore. Dr. Knight located first in Bruceville, Texas, where he was in practice for four years. Since that time he had resided in Temple and was in active practice until 1940, doing general practice and surgery and officiating at more than 3,000 deliveries.

Throughout his professional life Dr. Knight was a member of the State Medical Association and American Medical Association through Bell County Medical Society, of which he was a charter member. He was elected to honorary membership in the State Medical Association in 1945. He was also a member of the

Twelfth District Medical Society. He was a charter member of the King's Daughters Hospital Association and one of the organizers of the King's Daughters Hospital. He was active on the staff of the hospital until his retirement in 1940. He was a member and steward of the First Methodist Church and a member of the Lions Club. He was always active in civic affairs—political, educational, religious, and health.

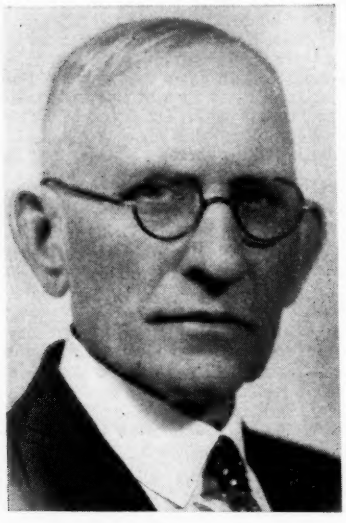


DR. LEE KNIGHT

Dr. Knight is survived by his wife, the former Miss Lillian Fuller, whom he married December 28, 1897; two daughters, Mrs. T. B. Duggan, Lubbock, and Mrs. E. R. Aday, Fort Worth; a son, Jack Knight, Houston; one sister, Mrs. W. H. Easterling, Temple; and three grandchildren.

Dr. Robert Bruce Bell. Waco, Texas, died August 7, 1947, exactly a month after he was knocked down and injured by a motorcycle.

Born February 22, 1860, in Rapides Parish, La., Dr. Bell was the son of A. C. Bell, a Mississippi steamboat captain, and his wife. Prior to Dr. Bell's birth his father's boat was caught in a severe Gulf storm and hope was almost lost for the ship and its crew when another boat named the "Robert Bruce" came to the rescue. The elder Bell declared then that if he had a son, his name would be Robert Bruce, and when Dr. Bell was born, the promise was carried out. Dr. Bell attended old Waco University, now Baylor University, in Waco, and a medical college in Tennessee before entering Baylor University School of Medicine, then in Dallas, from which he was graduated in 1903. After four years of practice in Van Zandt and Kaufman Counties, Dr. Bell moved to Waco, where he was actively engaged in medical practice until his fatal accident. When he first moved to Waco, Dr. Bell established the T. C. U. Drug Store near Texas Christian University, then located in Waco, and operated the store until the twenties, when he sold his interest in the business.



DR. ROBERT BRUCE BELL

Dr. Bell was a member throughout his professional career of the State Medical Association and American Medical Association, first through Kaufman County Medical Society and then through McLennan County Medical Society. He was a member of the Christian Church. In addition to his many years of activity in medical affairs, Dr. Bell was prominent in the development of his community. North Waco was sparsely settled and had few city improvements when Dr. Bell became a resident there. He was so active in securing city water, sewer lines, schools, and street paving that he was nicknamed "the mayor of North Waco."

In 1896 Dr. Bell married Miss Bertha Pederson at Waco. Mrs. Bell preceded her husband in death August 16, 1939. He is survived by a daughter, Miss Ira Lucille Bell, Waco, and a brother, A. C. Bell, Dallas.

Dr. Clarence Thomas Smith, Nacogdoches, Texas, died of coronary thrombosis July 22, 1947.

Born August 26, 1892, in Chireno, Nacogdoches County, Dr. Smith was the son of Dr. Woolem Ira and Mary Lourena (Curl) Smith. He attended Southwestern University at Georgetown, and was graduated in medicine from Tulane University, New Orleans, in 1923. He served a one year internship at Touro Infirmary, New Orleans and a six months internship at Mississippi State Charity Hospital, Vicksburg. Dr. Smith then began practice in Nacogdoches, where he was active until shortly before his death.

DR. CLARENCE T. SMITH

Since 1926 Dr. Smith had been a member of the State Medical Association and American Medical Association through Nacogdoches County Medical Society, of which he was president at the time of his death. He was county health officer, a Methodist, and a member of Kappa Sigma and Phi Alpha Sigma fraternities, the Chamber of Commerce, and the Boosters Club. He served in the Navy during World War I.

Survivors include his wife, the former Miss Hattie Bright, of Nacogdoches, whom he married July 10, 1932, in Shreveport, La., and a sister, Mrs. Lizzie Blackburn, Nacogdoches.

CORRECTION

Dr. Edward Jackson Burns, Bangs, Texas, who died May 23, 1947, is survived by his wife, the former Miss Margaret Kellogg Vandervoort. In the notice of Dr. Burns' death published in the August, 1947, number of the JOURNAL (p. 297) the maiden name of Mrs. Burns appears as Miss Margaret Kellogg.